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WORLD-WIDE

AIR TRANSPORTATION

JANUARY 1946

AIR CARGO ★ ★ ★ AIR COMMERCE ★ ★ ★ AIR TRAVEL

Yesterday's Air Mile Is Only 528 Feet Today!

In This Issue

Skyway Foreign Trade • Postwar Australia Aims High
How Time Flies • Is the Helicopter Ready?
Give Us the Right Planes . . . We'll Give You the Tonnage

Panagra

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CALI

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EQUATOR
QUITO

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Director of Revenue and Finance

CITY OF NEWARK, NEW JERSEY

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(Trade Mark)

AEROVIAS NACIONALES DE COLOMBIA has completed negotiations for the delivery next year of three huge C-54's, to be used on the proposed Bogota-Baranquilla-Miami and the Bogota-Balboa routes, for which the company has applied to the CAB. In order to accommodate the larger planes, Avianca is extending the runway at Bogota to 2,200 meters, the one at Barranquilla to 1,500 meters, and plans to lengthen Cali's runway to 1,700 meters.

TACA de Venezuela has filed with the State Department in Washington for landing rights in this country in order to establish a route between Caracas (La Guaira) and Miami.

The Schipol Airfield near Amsterdam will be enlarged to make it suitable for the planned air service to the United States, Surinam, and Curacao, and for the airfield's inclusion in the New York-to-Moscow service of American Overseas Airlines. It is intended to extend the field and the take-off strips, rebuild the Fokker construction buildings and the workshops of KLM and complete an airport building.

A service, limited exclusively to *Clipper* air express and mail, has been inaugurated on a twice weekly basis between San Francisco and Honolulu by Pan American, and is being provided with C-54Bs recently obtained from the Army. By carrying mail and cargo on these planes, which, as now equipped, are not approved for passenger use by the CAA, additional passenger facilities are being made available on the regular daily *Clipper* service between the mainland and the Hawaiian Islands.

Skis are carried free of charge by Colonial Airlines, since skis are classified as visible sports equipment, and there is a 10-pound extra allowance for equipment in this category over and above the universally allowed 40 pounds. Colonial operates 18 daily flights to the Laurentian Mountains and the area in and around Burlington, Vermont, with convenient service to lodges available to skiers.

Ryan Aeronautical Company is continuing into peacetime its military airplane program. The new development work being done for the Navy will probably be carried along on an expanding basis from the present scale of operation, and the manufacture of specialized stainless steel products, principally exhaust manifolds and allied aircraft engine accessories, will also continue, though on a lower level than in wartime. At the same time, the company is conducting studies of the commercial and private airplane markets, with a view to reentering this manufacturing field.

The last of the speedy 14-passenger Lockheed airliners to be operated by Continental Air Lines has been retired from service, and replaced by a 21-passenger Douglas luxury airliner. The company's fleet is now completely made up of the larger Douglas planes.

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No. 1

AIR TRANSPORTATION

50 CENTS A COPY • $5.00 A YEAR

JANUARY
1946

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★
★ ★
★

THE COVER—Yesterday the plane was a fragile toy; today it is a swift, sleek transport which has brought lands thousands of miles away within quick and easy reach of the traveler and shipper. Here the artist highlights the aeronautical span of four decades. Airport terminal scenes such as this one are becoming increasingly familiar sights. The picture is reproduced through the courtesy of Thompson Products, Inc., Cleveland, Ohio.

JOHN F. BUDD, *Editor and Publisher*

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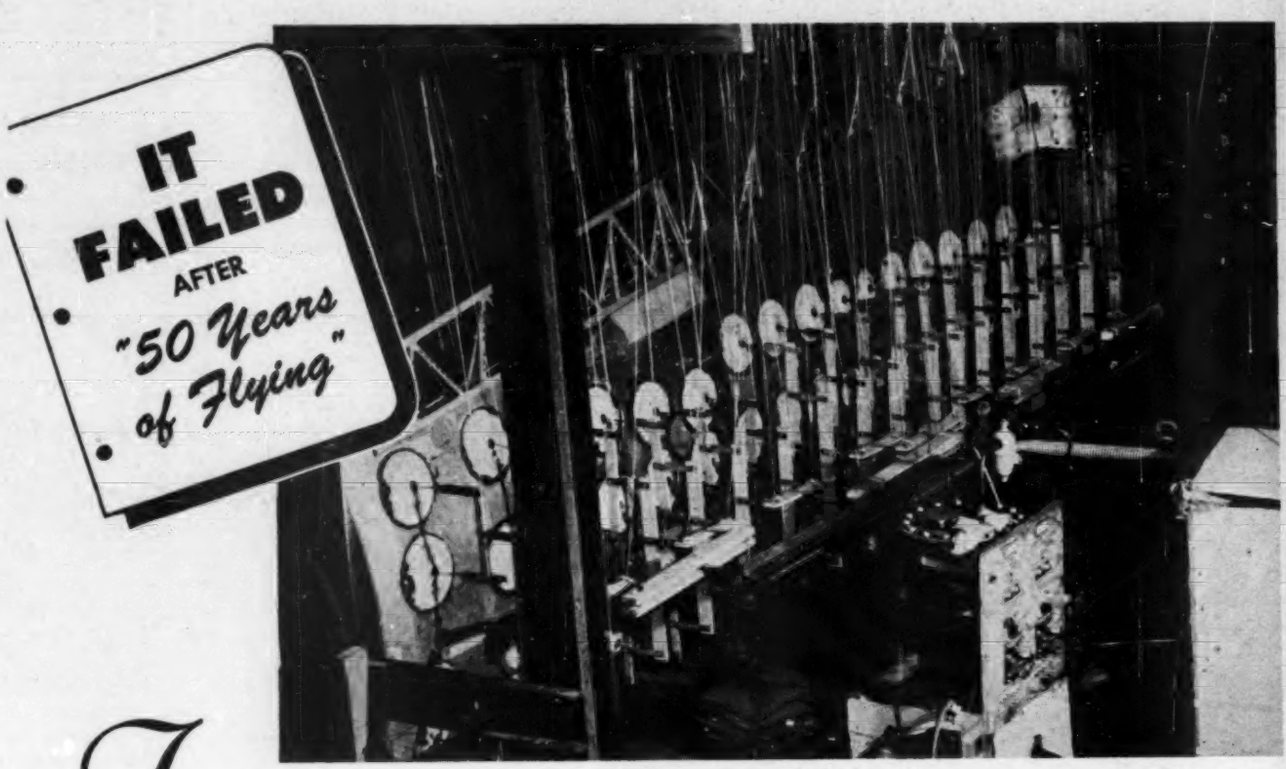

THE photograph shows a BEECHCRAFT innovation in structural testing. After this all-metal wing had passed its stationary load (static) test successfully it was subjected to a "rough air test" originated by Beech engineers. Tension patches were attached to both sides and the wing was continuously subjected to alternating loads of varying intensity, similar to the loads encountered in rough air at the full gross weight and full cruising speed of the airplane. It was bent back and forth, day and night, for weeks; to test for possible points of fatigue failure.

After the equivalent of 50 years of flying at 400 hours per year, the first failure occurred. That point was then strengthened.

The wing thus tested is for a new all-metal, four-place BEECHCRAFT designed for the medium price class. Its specifications and price will not be released until after it has fully proven that is a true representative of the BEECHCRAFT standards of quality, ruggedness, flight stability, and performance.

After laboratory tests of this type are completed, the airplane will be flown continuously, day and night, for 1,000 hours by a group of eight pilots before it is put into volume production.

When it is released to the public it will be worthy of the name BEECHCRAFT. In the meantime, BEECHCRAFT distributors will accept priority orders on a "sight unseen, specifications unknown" basis, with cash deposit. Over 250 such orders, now on hand, constitute a fine tribute to the BEECHCRAFT reputation. We wish to express our gratitude to this group of BEECHCRAFT enthusiasts and assure them that we are certain that they will not regret their confidence in us.

Beech Aircraft

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WICHITA, KANSAS, U. S. A.

By W. K. BALLANTYNE
Traffic Manager
TIME INTERNATIONAL

ONE of the publishers of *Time* Magazine once remarked that the best definition of news he had ever heard was, "News is the things people are interested in reading about today." With this as our cue, it becomes instantly apparent that *Time's* problem in foreign fields of reducing to the greatest extent possible the spread between date of publication and date of delivery to the reader is not inconsiderable. The practical details of handling such a problem—of keeping news from becoming so much waste paper—are well illustrated in the distribution of the Air Express edition to Latin America, involving as it does the exclusive use of air transportation.

Before May of 1941 all subscriber and newsstand copies of *Time* were delivered to Latin America by steamer with the result that transit time ranged anywhere from a week to as much as a month, and it was not uncommon to receive two or three issues in the same mail. In the pre-Air Age, such deliveries were tolerable although not desirable. However, as Europe became more deeply embattled and we ourselves edged closer to war, such a premium was placed on the rapid dissemination of news that the editors of *Time* established the magazine's first international edition for distribution to Latin America by air. The first issue was May 5, 1941.

Originally, the copies were printed in Jersey City on Tuesday and forwarded that night to Miami by Railway Express. Here, Friday connections were made with Pan American Airways' planes to every country in Latin American and most of the West Indies. This schedule was an immense improvement over previous performance, since it meant that all readers would have their copies by the Monday issue date and a few would have delivery before the weekend.

Of course, in deciding to distribute from the Miami gateway by air, weight instantly became an important factor to the extent that the Air Express edition had to be a much lighter book than the domestic edition. At present it contains about half the number of pages and considerably less advertising than *Time* domestic. It is printed on lighter paper and contains no color work, although this latter feature is planned for 1946. The editorial content is not rewritten, though certain articles may be shortened and some features omitted. But it is just as much *Time* as the magazine we in the States read.

W. K. Ballantyne

From the very start, this venture was highly successful—so much so in fact, that when we got into the war, space demands on Pan American Airways were so great that *Time* was rationed through the medium of air priorities. We had 3,500 pounds of weight per week—far less than we needed. Our only alternative was to print some of the magazines oversears. We did this, ultimately establishing operations at Sao Paulo, Buenos Aires, Mexico City and Bogota. The latter two were suspended just a short time ago because we can look forward to more air space in the future; the former will have ceased operation with the second issue of February.

Distribution Problems

Our readers are a pretty progressive lot of people, and we have to work hard to keep up with them. All during the war they have depended almost exclusively on the airplane in Latin America for passenger and mail service, and most of them know what one can accomplish with an airplane. So last Summer we began to think over the matter of distribution pretty seriously. The change from steamer mail to air delivery was an invaluable betterment distribution-wise. But we began to ask ourselves if it was the final answer. It really didn't make sense to print magazines on a Tuesday and not get them out of the country before Friday. We were ready and willing to pay the additional cost of domestic air transporta-

tion if we could begin to fly from Miami on Wednesday morning.

We talked the matter over with Eastern Air Lines and they agreed to an air cargo rate of 20 cents a pound or about three cents a copy. This called for a snappy production job to have the magazines printed and bundled and on a truck bound for LaGuardia Field by 4:30 p.m.—just eight hours after the printer got his copy. This production schedule has been maintained.

Eastern advanced its Tuesday night Cargo Liner schedule for a 6 p.m. departure, so that we could make a 2 a.m. deadline on Wednesday morning in Miami with Pan American. This schedule has been in effect since July 24, and to date we have never failed to keep our appointment with Pan Am. This 48-hour improvement means that a reader in Balboa, for example, now has his copy of *Time* as early as Wednesday afternoon — before you get your own copy in the States. It also means that his copy has been delivered to him at the rate of 100 miles an hour, from printing plant to his post office box!

In the beginning *Time* was flying about 3,500 pounds a week to Miami. The distribution schedule became somewhat more complex when our Mexico City operation was suspended in October. Because of the diversity of Mexican distribution, more gateways had to be used. At present, copies leave from Miami, New Orleans, New York, Brownsville, El Paso, and Los Angeles; and, in addition to Pan Am and Eastern, we also use American Airlines and TACA.

As things stand now, Eastern handles about 5,700 pounds of magazines a week to Miami, about 400 pounds to New Orleans, close to 600 pounds to Brownsville — all on an air freight basis. American handles about 125 pounds a week for Monterrey, Mexico, El Paso (for transfer to LAMSA), and Los Angeles (for Pan Am). These also move in their air freight service. Copies for Havana and Nassau still move by rail as far as Jacksonville; if we flew these to Miami, our Havana friends would have their manazines a full 24 hours earlier than the reader in the States! It will be readily seen that when *Time* flies, it moves an impressive poundage each week and ranks as one of the greatest users of air cargo in the country.

International Packaging Show is Planned for 1947

Plans for an international packaging exposition to be held in New York early in 1947 in connection with National Packaging Week were launched at the seventh annual meeting of the Packaging Institute, meeting at the Hotel Commodore.

According to an announcement by Walton D. Lynch, president of the institute, the exposition shows promise of being the first international merchandising exposition to be held since the close of World War II. Directors have completed plans for its financing, and have tentatively agreed upon dates for the show as well as its setting. At the annual meeting at which Lynch announced the directors' action and sought the approval of the institute's 300 member-firms for the show, Lynch stated that preliminary conversations with representatives of the Federal Government, as well as several foreign governments, indicated that not only American but a great many United Nation's firms will be represented.

South Africa Accepts

The Union of South Africa has accepted the Interim Agreement on Civil Aviation and the International Air Services Transit Agreement, thus becoming the fortieth member state of the Provisional International Civil Aviation Organization, and the twenty-fourth state to accept the Transit Agreement.

U.S., Britain Reach Agreement on Bases

Delegates to the Bermuda Civil Aviation Conference have reached a practical agreement on Anglo-American commercial use of nine military airfields built by the United States in Great Britain's North Atlantic and Caribbean possessions during the war.

For the time being, the commercial airlines will use the available military installations; but their own terminals are expected to be built within a short time. Control towers will be handled by the Army.

It was disclosed that seven of the bases are in the Caribbean area and two in Newfoundland. The primary landing fields will probably include Kindley Field, Bermuda; Collidge Field, Antigua; Benae Field, Santa Lucia; and Atkinson Field, British Guiana. All the others will be designated as alternate fields.

But the Americans and Britons still have a hard fight ahead of them. The Americans, on one hand, are in favor of open competition; the British, on the other hand, desire fewer flights and higher stabilized rates.

Philadelphia Protests Lack of Air Services

In a strongly worded plea before the Civil Aeronautics Board, Howard M. Shafer, manager of airports for the City of Philadelphia, declared that the city has no air passenger service worthy of the name. He said that 98 percent of the people attempting to purchase airspace out of Philadelphia cannot do so.

TOP TRIO OF AIR TRANSPORT ASSOCIATION

The trade association of two dozen airlines of the United States is now directed by three new executives, with Vice Admiral Emery S. Land (center), former chairman of the United States Shipping Board and War Shipping Administrator, in the pilot's seat. He has been installed as president of the Air Transport Association. On the left is General Milton W. Arnold, former Deputy Chief of Staff of the Air Transport Command and leader of the Eighth Air Force, who has become vice president of the ATA in charge of operations. Former Congressman Robert Ramspeck (right), is executive vice president. The three new officials will reorganize the ATA and help the airlines solve such problems as all-weather flying.

Big airline orders for the MARTIN 202!

What's the big news in aviation today? The Martin 202! Right now, large initial orders for the 202, totaling millions of dollars, are on Martin's books. And this is only a beginning! More and more airlines are signing up. Record-smashing domestic and foreign sales are in the making. And in 1947 Martin will be turning out the 202 at a rate of 50 a month! Martin sets the pace for postwar air travel! It's the plane that most nearly meets ATA specifications for a twin-engined, medium-range transport. It obsoletes any plane of its class now flying. And it's backed by Martin's 37 years of advanced aircraft design! No wonder the airlines are piling up orders for the new Martin 202!

Here's Performance Plus!

Years ahead of the field, the Martin 202 flies 100 m.p.h. faster than today's transports . . . offers comfort unsurpassed by even the largest 4-engined craft . . . cuts operating costs to the marrow. This plane is not just designed *for* the airlines. It's designed *by* the airlines . . . custom-built by Martin . . . to the most exacting standards of the air traveler.

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THE GLENN L. MARTIN COMPANY • BALTIMORE 3, MARYLAND

Give Us the RIGHT PLANES... We'll Give You the Tonnage

By CLAUDE N. PALMER
Special Assistant
United Fresh Fruit and Vegetable Association

IT may be of surprise to learn that the fresh fruit and vegetable industry has not been content to leave its postwar air cargo planning in the drafting-board stage, or to wait patiently until aeronautical engineers designed planes specifically suited to our needs and the commercial airlines began operating them. Neither has our industry relied solely on the fact that some day large fleets of surplus army transport planes may be made available for its convenience and use.

Without prejudice to our industry's patriotic desire to see all excess military equipment put to good civilian use, I might add that we are not convinced of the ultimate economy of converting Army C-47 or C-54 transport planes to domestic freight hauling, any more than we are convinced that discarded Army jeeps can be made to substitute for the family sedan. It's all a question of the equipment's suitability for the job it is intended to perform in civilian life.

The mere fact that a discarded Army transport plane can still fly is not, to us, any reason why we should wax enthusiastic about its use as a domestic freight-carrier. Neither is the fact that it can be converted easily the main factor. The main factor is: *Can it do the job our industry needs to have done?* And can it do that job as *economically*, or *more economically*, than a plane of more modern design? If the answers are "No," I believe the obsolete Army transport plane doesn't fill our needs.

Latest Planes Needed

All this may sound cold-blooded and unpatriotic in face of the fact that many obsolescent Army transport planes are being offered for sale. But business must be cold-blooded, just as the military must be when it left millions of dollars' worth of obsolescent equipment in Europe and the Orient. The military demand the latest in equipment. By the same reasoning, industrial competition demands the latest and best of equipment to counteract wartime handicaps and restrictions.

The fruit and vegetable industry is not alarmed at "reasonably high" air cargo rates. After all, it has been paying a ratio of five-to-one as compared with all other rail payload. There's a bonanza in air freight waiting when the right cargoplane comes along.

In spite of these handicaps and restrictions, some of the more air-minded members of the United Fresh Fruit & Vegetable Association have, quietly and at considerable financial investment, been conducting experimental flights over long stretches of the national airways, realizing that, when substantial air cargo space becomes available, as much as possible of our industry's spade work must have already been done in order that our commodities may be in a position to utilize air transport at the earliest possible moment.

The Ralph E. Myers Company, of Salinas, California, has been conducting test shipments to Eastern markets for more than a year; it has launched upon a program of regular, thrice-weekly air cargoes. The first shipment consisted of 18,500 pounds of California tomatoes, plums, apricots, strawberries and lettuce.

Claude N. Palmer

Airborne Perishables

These 18,500-pound shipments—up to that time the largest civilian freight movement by air ever undertaken, made in a new transport plane which was designed and built by the Consolidated Vultee Aircraft Corporation (Model 39) as a result of consultation with Mr. Ralph E. Myers concerning the fresh fruit and vegetable industry's air transport needs. So, you see, our industry is already influencing the shape of things to come in freight movement by air.

Without posing as a transportation authority, I believe I can say without much fear of contradiction that the future of all air transport of goods hinges to a greater extent upon a large and continuous volume of perishable soil products than upon any one other source of payload. Why? The answer is simply that fresh fruits and vegetables hold a key to the profitable operation of transport planes on their West-to-East and South-to-North flights.

High value, high-density manufactured goods can be found in plenty in our Northern and Eastern cities to make profitable East-to-West and North-to-South traffic at reasonable air rates, or so we have been led to believe. But, when it comes to tonnage available for payloads in the other two general directions, we are convinced that the prospective air cargo carrier would be put to it rather seriously in trying to find suitable candidates with which to fill his available space.

And, when I refer to "filling" a freight-carrying plane's available space, I mean just that, for there are probably

FROG LEGS FROM CUBA—M. J. B. Duggan, vice president of National Frozen Foods, Inc. (left), inspecting part of a 4,000-pound air shipment of quick-frozen frog legs as William L. Rome, executive vice president of Air Cargo Transport, looks on. The shipment was flown from Cuba to Miami by Express Aero Interamericano, and then picked up by an ACT cargoplane and sped to Newark Airport. Dr. Crane stresses in his article the fact that there are at least "several hundred products which possess one or more characteristics which make them likely candidates for carriage by air."

few other air cargo candidates which will always move in full planeloads. It has taken us about two years to convince many in the aeronautical industry that our industry is not interested in, and could not profit by, l.c.l. or so-called "token" shipments by air. Our industry ships in full carloads, and the average lading of all our commodities is 15 tons.

Therefore, the 18,500-pound payload Model 39 is no "Giant of the Air," so far as our industry's needs are concerned, though it is a long step in the right direction as compared with the 5000-pound capacity ships available elsewhere. I am not disparaging the latter. I am merely trying to convey that our industry can provide tonnage beyond the capacity of most freight transport planes now available for civilian use.

Tonnage Waiting

Yes, it can provide such tonnage—provided the charges for air cargo are reasonably commensurate with the additional prices airborne perishables will have to command over the surface borne. And this is a challenge to the ingenuity and fairmindedness of the aeronautical industry. Our industry is used to high transportation costs, paying, as the Interstate Commerce Commission has found, on a ratio of five-to-one, compared with all other rail payload.

To make this point more specific, let me explain that fresh fruits and vegetables account for only 1½ percent of the tonnage carried by all Class I railroads, while contributing 7½ percent of their freight revenues. Therefore, we are not floored by the prospect of reasonably high air cargo rates. But the fact remains, there is an intrinsic value attached to any service, including transportation, beyond which the ultimate consumer is unwilling to go.

Our industry has felt, of course, that transportation was absorbing too much of the consumer's fresh fruit and vegetable dollar, and that our distributive services were getting too much of the blame. We don't want that to happen when air transportation comes into the picture, or seeks to come into it, in a big way. So we hope the aeronautical industry will consider the relatively low value per pound of our commodities when its rate-makers sit down to work out tariff schedules.

I am not writing about appropriate air rates: first, because that vexatious question is still far from being settled by the aeronautical experts; second, and more important, because all such questions are settled ultimately in the Court of Public Opinion. For that reason, our industry is more interested in actual tests, such as those of Ralph Myers, than in any amount of mere theoretical projection.

We know we have a large—yes, a tremendous!—potential volume awaiting the air freight carrier who will bid for it in terms and with services our people and their ultimate customers can understand. It will be entirely up to those who seek to attract our tonnage as to whether they will get any appreciable part of it, or whether it will all remain with the rails and trucks. With all due respect to the romance of air cargo, we can still get along without it as we have for generations.

With that more or less old-fashioned viewpoint, it is not surprising that our industry has not gone all-out for a newer, quicker, more romantic mode of transportation. And it should not be surprising that, while we have been encouraging the development of economical air cargo services, we have been working just as hard in an endeavor to bring about certain long-delayed improvements in the services we may expect of our railroads in the post-war era.

Committees at Work

The United Fresh Fruit & Vegetable Association has a Refrigerator Car Committee which is working just as hard—and at no cross-purpose—as is our Air Transport Committee. Both committees are seeking only one thing—better transportation facilities and services for fresh fruits and vegetables with a view to the better performance of our responsibilities to the public.

Our Air Transport Committee is under the chairmanship of Ralph E. Myers, and the Refrigerator Car Committee under the chairmanship of John N. Kelley, manager of fruit transportation for the Fruit Dispatch Company, New York City. Mr. Kelley's committee has been instrumental in establishing a research fund of $100,000 contributed by the railroads and private car lines, for work on improvements in the design and operation of refrigerator cars.

Soon, one or more model cars, built to specifications laid down by our committee and operated under joint observation by the Association of American Railroads, the United States Department of Agriculture, and the United Fresh Fruit & Vegetable Association, will be plying the rails. This, it seems to me, might well be a challenge to the aeronautical industry, not discounting the splendid contribution Consolidated Vultee has already made to our cause.

There will be competition—the stiffest sort of competition—for our industry's more than 27 billion ton-miles of yearly payload. Perhaps the aeronautical industry's interest may inspire greater efforts and better services by the rails. That being likely, the aeronautical industry cannot afford to take too much of our industry's patronage for granted.

The Commercial Planes Fly Again at Newark

IT'S no mere accident or trick of fate that Newark is experiencing a surge of aviation activity which, if the experts are correct in their predictions, will make her one of the pivotal air terminals in the country.

Mayor V. J. Murphy

There's a terrific amount of backlog business and air traffic waiting for New Jersey's most important city. A strong current of air commerce courses in the direction of Newark Airport, and this has become even mightier in the years that the Army took over the field for war purposes. But now the airport is back in the city's hands and there's going to be a slam-bang celebration by the air-minded citizens to mark the resumption of commercial air service in that neck of the woods.

Sunday, February 3, has been set aside as the big day—just one day before scheduled operations are inaugurated. Cooperating will be the 10 airlines and seven non-scheduled contract carriers utilizing the airport's facilities. The airlines are American, United, Transcontinental and Western, Eastern, Colonial, National, Pennsylvania-Central, Northeast, Northwest, and Hudson. Comprising the non-scheduled air transport group are Air Cargo Transport, Newark Air Service, Otto Aviation, Trans-Caribbean, Veterans' Air Express, Inter-Continental, and Trans-Air.

Dynamo behind the all-out celebration program is the official Operating Committee headed by Arnold M. Hess, secretary of the Newark Board of Education. Sharing various responsibilities on the committee are Archibald Armstrong, acting manager of Newark Airport; Mahlon W. Parsons, acting port supervisor; Carlos Kelly, vice president of the Fidelity Union Trust Company, and chairman of the Sub-Committee on Airport and Seaport of the Citizens' Advisory Committee to the Newark Planning Board; and Charles Evans, member of the Newark Planning Board. The latter is secretary of the Operating Committee.

Services Cooperate

Both the Army and Navy will be represented in the proceedings, but the bulk of the show will belong to the Army. Outstanding aircraft of the war will be on exhibit from 9:30 a.m. to 3:30 p.m. — transports, fighters, bombers, and trainers. The famous Sikorsky R-5 helicopter will probably be on hand to show off its accomplishments. One-third of the Brewster hangar will be devoted to the Army exhibit.

The Army show will take place between 10 a.m. and 11 a.m. One of its features will be a demonstration of the two-motored DC-3 coming in for a landing on one engine. This will be duplicated in the afternoon.

Speakers will take to the stand at 2 p.m., with Carlos Kelly in the role of introducing the guests. Mayor Vincent J. Murphy, one of the most important moving spirits behind the return of the airport to the city and of its establishment as a first-class field, is scheduled to make the initial address. He will be followed by Colonel Clarence P. Kane, of the Atlantic Overseas Air Service Command, and commanding officer of the Newark Air Base; and Gill Robb Wilson, well-known aviation editor of *The New York Herald-Tribune.*

Airline planes will be placed on exhibit in front of the administration building. There's a christening on the program, too. Mrs. Murphy, the wife of the mayor, will take care of the honors, with a Douglas *Skymaster* as the object of christening.

Newark is going to town in a big way. The airport will reopen with 60 daily schedules. These, however, will build to 80 within two months.

Does Newark place its faith in the future of air transportation?

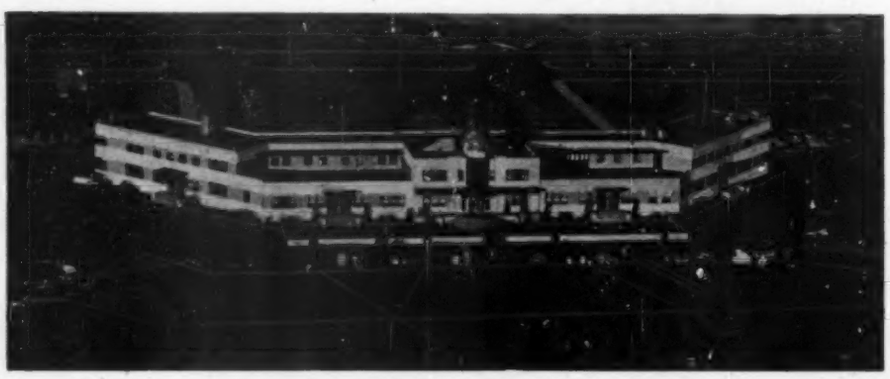
You bet!

New Foreign Air Shipping Set-up Bared by AA, REA

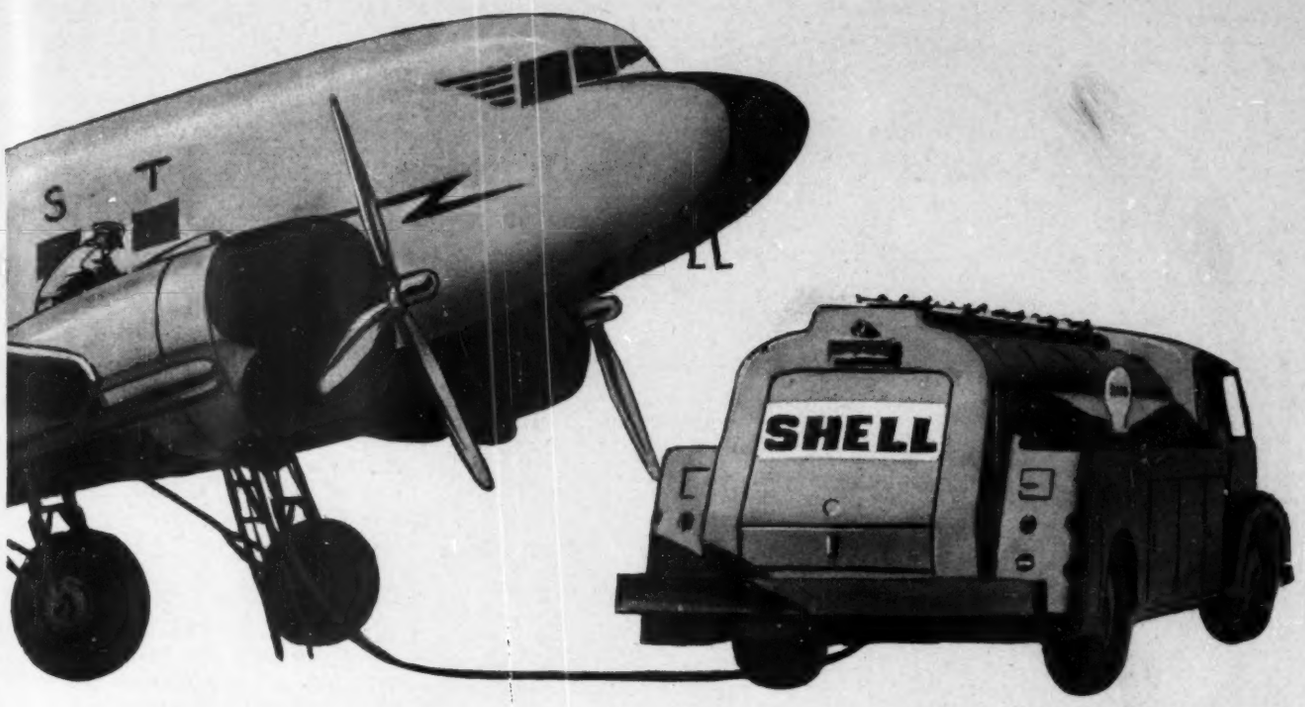
Inauguration of an international air express and air freight service combining the facilities of American Airlines System and of Railway Express Agency was announced this month by the two companies.

International shippers are now offered a through two-way service from the 23,000 air and rail express points in the United States to all cities on American Airlines' foreign and overseas routes. Simplified procedure has been set up whereby air express and air freight are cleared at international airport cities including Washington, Philadelphia, New York, Boston, Chicago, Detroit, Dallas, Fort Worth, San Antonio, and El Paso.

REA's pick-up and delivery service and coordinated air and rail transportation is thus combined with the international routes of American, with simplification of handling and paper work for international shippers. Insurance, shippers' letters of instruction, "in bond" handling, and customs clearance will be provided, in addition to the regular pick-up and delivery service of the express agency, under the arrangement.



NEWARK AIRPORT — Administration building in front of which the airlines will exhibit their planes during the reopening celebration on Sunday, February 3.



Familiar Sight to Air Travelers

The cheerful colors of the Shell tank truck are well known to air travelers the country over. Air passengers using the Newark Airport, now reopened to civilian planes, will find this great field no exception . . . Shell will be there!

Every Shell tank truck you see is a symbol of an organization geared to tomorrow's aviation needs, and abreast of the tremendous surge of progress in modern air transportation.

Backed by the full force of Shell Research facilities is a complete line of Shell Aviation fuels and AeroShell lubricating oils and greases. Whether it's for passenger or cargo service, for airline or private planes, you can rely on Shell!

SHELL

FOR THE AGE OF FLIGHT

POST-WAR AUSTRALIA AIMS HIGH

By LLOYD CLARKE
Former Aviation Editor
SYDNEY DAILY TELEGRAPH

AN avid newspaper reader probably would have noticed two small items recently which, although entirely unrelated, provide the first valuable clue to Australia's civil aviation future.

The first was a small notice announcing the arrival on the West Coast of a team of Australian National Airways pilots and technicians. ANA controls Australia's major internal airline network. Its men had come to America to train in the Douglas C-54 before taking delivery of a number of these aircraft.

The second, which received slightly more prominence, was an announcement by the Commonwealth Government that it intends to negotiate a transpacific air transport agreement with the United States as soon as possible.

The two together don't really have a great significance, unless one considers with them the recently announced program of Australian Civil Aviation Director Daniel McVey, and the oft-repeated intention of ANA to launch into the international airline sphere. Perhaps it would be a good idea if we retraced our steps a little in order to get the picture in perspective.

Australia's participation in the international airline operations dates back to 1934 when Queensland and Northern Territory Air Service (popularly called QANTAS) flew their DH-86s from Brisbane, Queensland, to Singapore to provide the Australian link in the England-Australia air mail service. In 1938, the DH-86s gave way to four-engined Short flying boats. The Australian part in the England-Australia route extended to Karachi in the West and to Sydney in the South.

This development was followed swiftly by the inauguration of a trans-Tasman service between Auckland, New Zealand and Sydney. QANTAS became the first Australian company to operate an overseas airline.

When war came in 1939, three international air services were operating into and out of Australia. Two of these were controlled by Australian companies—QANTAS and Tasman Empire Airways (Sydney-Auckland). The third was by the Dutch KNILM airline flying from Saigon, Indo-China, to Sidney and connecting with the KLM Amsterdam service at Batavia, Java.

The romantic, if grim, development of air transportation services during the war, however, has awakened the interest of a number of private operators in Australia. These, with QANTAS, are now determined that Australia shall not merely be a terminal of overseas airlines, but shall be the base, in fact, for services originating there.

Expansion in View

Australian National Airways and Ansett Airways are two of the internal network organizations that have announced their intention to participate in world airline business.

And there are good reasons to encourage this growth of local development. With the exception possibly of the United States, it is doubtful whether any country in the world has so air-minded a traveling public as Australia. The development and confidence in airline travel there is a logical outcome of the space element that separates the principal business and economic centres. More than 1,800 miles, for instance, separate Melbourne, the Victorian capital, and Perth, capital of Western Australia. In distances it represents a flight of well beyond—say, London to Moscow—but it is accepted as a general and commonplace day's run for the business man with interstate interests.

Although Australia has a total population of only 7,300,000, ANA alone carried 97,691 passengers in the six months ending December, 1944. This figure ignores the fact that the company during most of that time had only nine aircraft—three DC-3s, five DC-2s, and an old DH-89. Services, too, were interrupted frequently in order to meet special service demands.

A glance at the global map shows the extraordinarily advantageous position that Australia enjoys as a world airline center. Flying the Great Circle route from Sydney to London by way of Shanghai and Moscow is a mere 10,560 miles compared with 13,358 miles over the old route through India and the Mediterranean.

East of Sydney, air routes sweep through New Zealand and the Pacific Islands to the United States and Canada. To the West and North, they

cross the Netherlands East Indies to Singapore, branch out from there to Asia, Europe, and Africa, and through the Northeast to French Indo-China, China, Japan, and Asiatic Russia.

Australian airline operators realize that along these routes there are men and goods awaiting transport. They are determined to provide the facilities to accommodate them. ANA alone plans an 18-aircraft overseas fleet to fly an estimated 8,367,690 miles—with or without subsidy. The provision of this fleet incidentally will increase the company's capitalization by some $26,000,000.

Necessary Agreements

Details of these projected services are as yet undefined. a considerable amount of company reorganization will be necessary before they can be launched. A good deal of the future of these services will depend on agreements that are being sought at present between America, Great Britain, other members of the British Commonwealth of Nations, France, and Russia.

But the Government's determination to see that Australia is not only ready to take her place among the airline nations of the world but that her air fleets are not pushed off the airlanes by overbearing political influences and competition, is reflected both in the announcement of Civil Aviation Director McVey and the Government's intention to reach an air transport agreement with the United States.

Mr. McVey's statement began by briefly announcing that the Commonwealth Government would invest up to $30,000,000 to convert Mascot Airport, Sydney, into one of the most up-to-date international airports in the world. Specific details of the airdrome plan were not announced; but it is known that it will include the lengthening of runways, the provision of the latest radio navigation aids, and general passenger facilities.

Mascot is situated on the shores of expansive Botany Bay, some eight miles south of Sydney Harbor, and the Government's project provides for the establishment of a modern flying boat base in conjunction with the airport. This strategically opportune site will enable it to be one of the few places in the world where flying boat and airplane activities can be combined at one center.

Mr. McVey, who is also Director-General of Aircraft Production and Posts and Telegraphs, had returned from London where he represented Australia at the British Commonwealth Air Transport and the British Commonwealth Communication conferences. His first comment bore a touch of acid. He bitterly criticized the inadequate organization along present Empire routes and announced that the Commonwealth Air Transport Council already had taken steps to establish an organization to do something about it. In addition to the Commonwealth's plans for the Sydney airport, he said that steps also would be taken to adequately equip Darwin with an airport in conformity with the importance of her airline position at Australia's "back door."

General agreements reached at the London air transport conference included a decision under which British Overseas Airways and QANTAS divide schedules and operate a parallel partnership between Heathrow, near London, and Sydney. This step marks a major expansion in the operations of the Australian organization which, prior to the war, operated only as far as Karachi, India. Territory beyond that was considered the preserve of the British company.

In future, however, BOAC and QANTAS will use the same types of aircraft. They will carry each others traffic, pool their revenue and bear their own expenses. The revenue for each company will be divided on a basis in proportion to the frequencies which each concern operates.

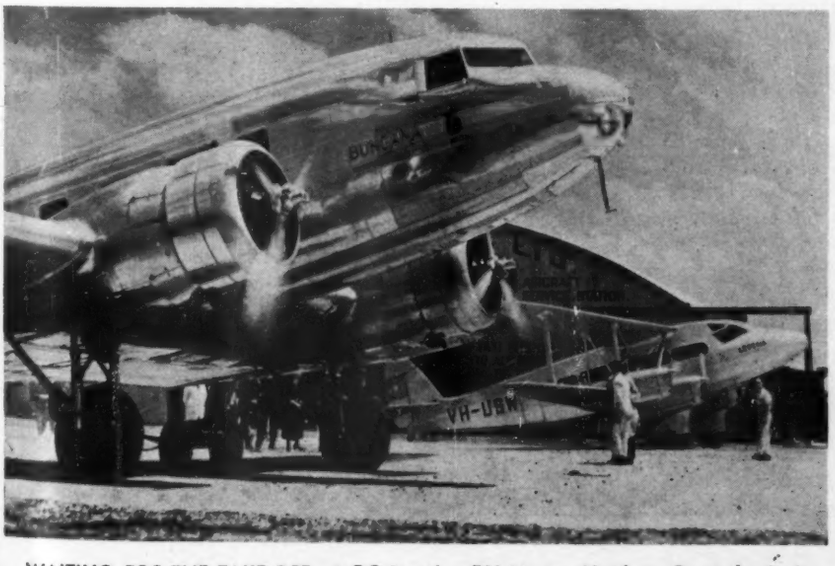
Meanwhile, the Australian, New Zealand and United Kingdom governments have announced their intention to adopt a similar parallel partnership with Canada in the operation of transpacific services. Canada, it is proposed, will run a service from Vancouver, via San Francisco, Honolulu, Canton Island, and Fiji to Sydney. This plan provides for one trip in every four to terminate in Auckland. Although they have neither accepted nor indicated their operating organization, the Australian, New Zealand, and United Kingdom Governments have accepted the liability of operating a transpacific route parallel to the Canadian service.

Action Asked

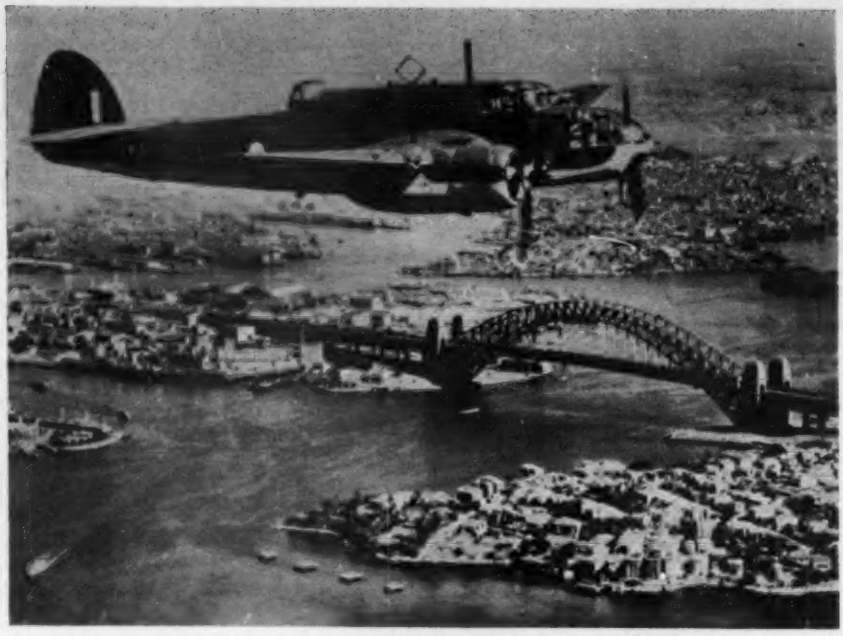
Mr. McVey ended his round-up with a note of urgency. He stressed the fact that Pan American Airways propose to begin airline operations to New Zealand and Australia by March or April, 1946. He suggested that the Empire organizations should be ready to begin their services concurrently unless they want to risk loss of leeway and begin at an even greater disadvantage than they are at present.

In this particular aspect there is little need to stress here the great advantage that transpacific operations of the American Air Transport Command have gained for peacetime United States airline operators. At a recent stage in the Pacific war, the ATC had planes landing at Finschhafen, New Guinea, from San Francisco, every hour. When the Asian pincer movement was current, ATC planes were crossing the Hump into China every 45 seconds. It finished the war with something like 5,000 transport aircraft and a pool of trained pilots and navigators beyond compare.

It is not surprising, therefore, that the Australian Government, realizing the great handicap under which they are laboring, should take all reasonable steps to safeguard the services of its own organizations. With this end in view, the Federal Government announced its intention to seek a reciprocal transpacific air transport



WAITING FOR THE TAKE-OFF—A DC-2 and a DH-86 at a Northern Queensland airfield. Australia enjoys an advantageous position on the world air map, and is striking out for extended air services.



FLYIN' HIGH—Sydney as it looks from the air. Australia's metropolis is becoming an increasingly important terminal in international air transportation.

agreement with the United States. Cabinet's decision followed a series of conferences at which New Zealand and United Kingdom Governments were represented.

Briefly, the agreement which Australia is seeking recognizes the right of United States Pacific airline operators to enter Australia, provided reciprocal landing rights are granted to Australian and other Empire aircraft operating in, or over, American territory.

Transport Rights

The Australian Government is prepared to base the agreement on what are popularly regarded as the "four freedoms of the air"—the right of aircraft of one party to fly over the territory of another party, to land on that territory, to carry passengers from that territory to the other terminal of the service and to bring through passengers into the territory.

Preliminary talks with United States representatives have revealed America's desire for the inclusion of a "fifth freedom"—the right to transport passengers and freight between intermediate points along the route, say between an Australian terminal and New Zealand, or Fiji. There seems little doubt that Australia will be unwilling to concede this, mainly because of its wish to safeguard both the present trans-Tasman Service and traffic with Fiji and other Empire possessions for contemplated subsidiary Empire services.

While airline operators and political strategists are maneuvering for position in the international sphere, Australia plans new and greatly expanded services.

New impetus has been given to private operators' plans by a recent High Court (Australia's equivalent to the United States Supreme Court) decision which has, in effect, declared that Federal legislation for the nationalization of interstate airlines to be invalid. There is little need to reiterate here the widely publicized Government proposal to establish an Australian Airlines Commission to take over and operate all airlines operating between one state and another or between one state and Federal Territory.

The act was actually passed, but its validity was challenged by three of the companies concerned—Australian National Airways, Ansett Airways, and MacRobertson Miller Airlines. The latter operates along the Western Australian coast from Perth to Darwin.

The Court actually held that the Government's act was valid so far as the Commonwealth's authority to establish and operate airline services was concerned. But it also held that the Government had no authority to take over or displace any existing service. In other words, if the Government wishes to enter the airline business it has to do so in the same way that any other competitor might enter the field.

With this situation cleared, ANA has announced a new and ambitious postwar program for internal airline expansion. Their plans include the establishment of a night sky-sleeper service between Sydney and Perth, and a through daily service between Sydney and Hobart (the island state off Australia's South coast). Civil versions of the C-47 will fly between Melbourne and Sydney four times daily; between Sydney and Brisbane three times daily; between Sydney and Adelaide daily; and twice daily between Melbourne and Adelaide.

U.S. Planes Preferred

Comment has frequently been made on the preference which Australian airline operators show for American aircraft. Australian lines are generally operated by either Douglas or Lockheed aircraft and it might not be out of place to point out here that there are at least two good reasons.

In the first place, British concentration on the development of warplanes has left her sadly behind in the civil aviation field; it is doubtful whether even current British designs can offer anything as suited to Australian conditions as America.

It is natural that the United States should develop to its present high efficiency peak, aircraft that are eminently suited to long-range flying. And it is not surprising that America, which is so similar in area and many other respects to Australia, should have produced aircraft equally suited to Australian conditions.

Australian operators, however, have stressed time and again that their interests lie, not in the planes of any one particular nation nor of any one particular company. Their determination is to purchase planes, whether from Britain or America, that will enable them to provide the maximum service.

And so, as the world outside plans ahead for the great new era that already has begun in civil aviation, Australia, her plans complete and her goals fixed, awaits only the settlement of international agreements that she believes will accord her a place of her own in the skyways of commerce.

McCarran Bill

Senator Pat McCarran has introduced a bill in Congress to set up an all-American flag line to represent the United States in international air transportation. The measure provides that no more than two per cent the amount of common stock in the corporation may be held by any one person, association, or corporation; and that no stock to securities shall be owned or held by any citizen or subject of any foreign government. If the plan, which includes participation by railroads and steamship lines, is approved, it will provide for acquisition by the flag line of all the assets of all international air carriers on the date the plan goes into effect.

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Is The Helicopter Ready?

By IGOR I. SIKORSKY

THE last decade has witnessed spectacular advances in the art of flight. Meteoric fighter planes and huge air transports and stratoliners crossing continents and ocean in a matter of hours have assured aviation's important position in war and in peace.

Yet the airplane, in spite of its tremendous development and its impact on the history of mankind has materialized only one of the two fundamental ideas man has always associated with flying. The airplane has the unexcelled ability to fly freely along any desirable course, making no detours because obstructions do not exist. But with respect to its departure and landing, the airplane is limited to definite spots which usually are located at some distance from residential and business sections.

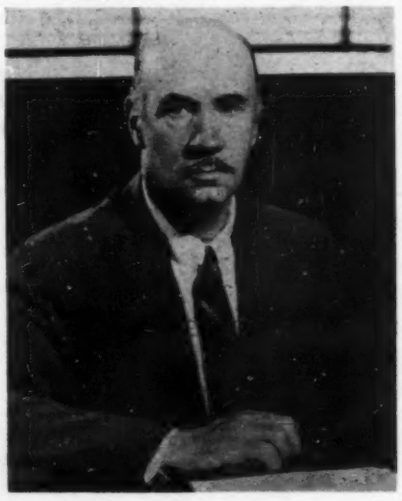
An automobile can carry a traveler from home to destination. The airplane can take him from one airport to another. But the creation of an aircraft that would be completely free from this limitation—that could, like a humming bird, rise in the air or land on a very small clearing even though surrounded by obstacles—posed a second problem. And this problem for a long time challenged the resourcefulness of aeronautical engineering.

It is significant that one of the earliest crystallized dreams about human flight—the legend of Icarus—stresses this second problem of getting into the air from small inaccessible places. The answer—the helicopter—remained obscure until the very recent past.

The fundamental principle of the helicopter is that all lift is obtained from one or more lifting rotors driven directly by the engine to pull the craft straight upward in the air. The principle is extremely simple. But its conversion into practice required the correct solution of a number of problems so difficult that for a long while doubts were expressed that a successful helicopter would ever become a reality.

Undoubtedly military necessity speeded its development greatly and advanced our knowledge of rotary wing design by a number of years. Today we have a helicopter which, with more than 30,000 flight hours already logged, is at the call of a world it has never had a chance to serve in peace.

In the war years we have seen our helicopter perform the most difficult military rescue missions. More than 400 Sikorsky helicopters were built on military contract, all of them destined for service with the United States Army Air Forces, the United States Navy, the United States Coast Guard, the British Royal Navy, and the Royal Air Force.



Igor I. Sikorsky

In frozen Labrador, in stifling Burma, over the barren hills of China, and nearer our home front, our helicopters have performed heroic service. They have carried desperately needed plasma and serums under conditions that grounded ordinary aircraft. They have been packed into ATC transports and sped halfway round the world to evacuate the wounded and rescue others from behind enemy lines.

Let me tell you about that Labrador rescue mission because it is not as familiar as the China rescues, and some other missions of mercy.

Labrador Mission

On April 21, 1945, a missing RCAF plane was located in the heart of the Labrador wilderness. The ATC search plane which discovered the survivors dropped emergency supplies and radioed directional instructions to Goose Bay. Two rescue planes on skis went out with emergency supplies. But when they tried to take off again they were helpless in 10 feet of slushy snow. So now the crews of the rescue planes also needed to be rescued. Rescue by dog train was not practical under the circumstances. A helicopter equipped with floats was the last resort to bring out victims and would-be rescuers as well.

Through the ATC and the Navy, a Coast Guard helicopter—one of our R-4 models, a little two-place job of 180 horsepower—was dissembled at Floyd Bennett Field, New York. It was packed into an ATC C-54, ferried to Goose Bay, reassembled and flown 146 miles over the wilderness to Mecatina, the rescue base. From there it made repeated trips to the crash camp to bring the marooned men out one at a time.

When we consider that less than four years previous, the longest distance flown by a helicopter in the United States was less than one mile and that the highest altitude reached was 75 feet, this Labrador mission is a measure of amazing progress. Bear in mind that take-offs in the wilderness were made regularly from 2000 feet above sea level.

And now, thank God, the war is ended. We can resume the ways of peaceful commerce. *What part will the helicopter have in trade?*

Let us thing for a minute of the oil industry. A craft able to take off vertically, land without forward run

"WHAT'S THE QUICKEST WAY TO AN EXECUTIVE POSITION?"

Men have asked us that question for 36 years, and for 36 years the answer has been the same:

Master the underlying principles of business and industry. Study Production, Accounting, Finance and Marketing—not separately, but in relation to each other. Learn the fundamentals of not ONE but ALL of these four major business functions.

Men who direct the activities of others must have this kind of knowledge. It enables them to see beyond the specialized activities of one department. It broadens their vision, allows them to understand the problems of the business as a whole—the plant, sales force, treasurer—and to tell at a glance where the business stands by reading its financial reports.

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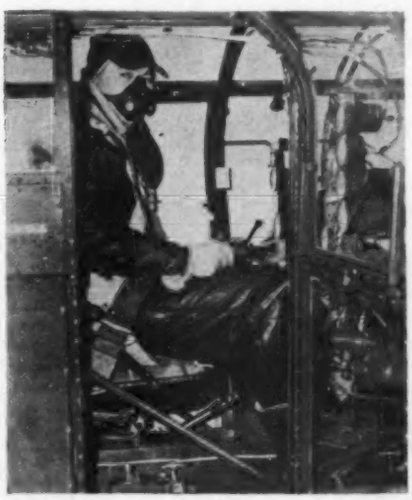
or hover just above the ground, will be of great assistance to oil men. Transportation direct to destination is a primary use. Aerial survey for pipeline routes is another. Pipeline inspection and maintenance men will gain new efficiency when they cruise slowly along the line in helicopters.

Then, at last, we are going to have a worthwhile instrument for pest control. Insecticide released under the helicopter rotor disc is driven downward among foliage which is agitated so that the underside of leaves can be reached by the chemical. Also the stems and stalks. This puts the insecticide where the bugs are most apt to hide. Who can estimate the value of crops that will be saved by this new helicopter method? Who can estimate the saving in health and comfort to the community?

Additional Uses

Of course, in taking animal censuses on ranches and ranges, because of its ability to hover, the helicopter will have no rival. Commercial fishermen may employ the helicopter to locate and lead the way to schools of tuna or mackerel. A small flight deck on the vessel's bow is sufficient. This is already a matter of record as operation from shipboard is no longer a novelty to helicopter pilots. Pleasure anglers eventually can fly to their favorite trout stream or bass waters and land in an area not greatly exceeding the rotor diameter of their craft.

The Post Office has use for helicopters. So do feeder airlines and fleet operators. Timber estimators can hover above woodland at their leisure when helicopters are in use.



RECORD BREAKER—C. A. Moeller photographed just after smashing the German-held altitude record to smithereens on January 10, 1946. Piloting an Army R-5, Moeller climbed to a height of 21,000 feet from the parking lot-airport behind the Sikorsky plant. The previous record, established on January 29, 1939, by Karl Bode in a Focke-Wulf helicopter at Delmenhorst, Germany, was 11,243.416 feet.

TO THE RESCUE—Actual rescue mission performed by the Sikorsky R-5 helicopter. Two men were saved at Penfield Reef, Fairfield, Connecticut, on November 29, 1945. Sikorsky helicopters have figured in numerous thrilling rescues at sea and on land.

The use of the helicopter in scientific investigations was illustrated in Mexico last summer. I had the honor to be present to witness this. Near Uruapan this newest type of flying craft was used to inspect our hemisphere's newest natural phenomenon —Particutin Volcano.

Yet today enthusiasm, however justified, should be tempered with restraint. Much has been accomplished —but much more remains to be done.

Today, and for some time to come, the relative cost of helicopters for individual use will be considerable. Their maintenance is not yet a chore for the neighborhood garage. Until mass production of frozen yearly models becomes the rule, such savings cannot be passed along to the consumer. Until that day comes, helicopters will not be a Sunday afternoon traffic problem on the airways near our cities. The first automobiles were expensive. Only a few could benefit by their use. Slowly continued engineering study and experience combined to make the flivver a part of our daily lives. So also must the helicopter slowly earn its own place in our economy.

Already it has made progress in its first five years than did the horseless carriage.

Future Trends

In line with this article, I would venture to make the following brief forecast as to possible future trends in design. I believe that this type of craft will have its limitations as to size and maximum speed. I personally do not foresee very fast helicopters. Indeed, it is probably even possible to combine the idea of a helicopter with that of an airplane having a craft that would take off

New World's Records for Helicopters

Established January 10, 1946

Stratford, Connecticut

Craft	Pilot	Payload	Altitude	Speed	Previous Record
R-5	C. A. Moeller		21,000 ft.		11,243.416 ft.
R-5	D. D. Viner			114.6 mph	76.151 mph
R-5	C. A. Moeller	1,650 lbs.		105 mph	None recorded
R-5	Robert Decker	1,100 lbs.		110 mph	None recorded
R-5	D. D. Viner	1,650 lbs.	11,000 ft.		None recorded
R-5	Robert Decker	1,100 lbs.	16,000 ft.		None recorded

with the help of a lifting rotor and then become transformed into an airplane. However, I believe that such a craft would always be less efficient than either a straight airplane or a straight helicopter in its own field. I believe, therefore, that the plane will for a long time remain the predominant vehicle for covering long distances at high speed and efficiently carrying heavy loads. The helicopter, on the other hand, is proving an extremely practical vehicle that will render an immense variety of vastly valuable services in all cases where its ability to take off and land from very small areas would be of value.

Helicopters with two or with several lifting rotors have been proposed a great number of times and several successful flying models have been built. While the future will show whether any such configuration will offer real advantages, I believe that the single rotor helicopter will perhaps remain the predominant type for many sizes.

LIFT CAPACITY—The R-5 shows what it can do with 16 open-air passengers plus a two-man crew. This demonstration promises something new and astonishing in helicopter transportation.

Three Decades Back

I remember well the time some 30 years ago when the biplane was predominant and it was taken for granted that large aircraft carrying heavy loads should always have a number of lifting surfaces. Therefore, triplanes and tandems were proposed and sometimes built. As time went on and as we know, they all became superseded and replaced by the more efficient monoplanes even in the giant sizes. I believe that to some extent there is an analogy with the helicopter.

Of course, for very large sizes it would not be practical to transmit the immense torque through a mechanical transmission and a huge shaft. It would be better to apply the torque close to the tip of the blade by way of auxiliary propellers as has been successfully demonstrated by Curtiss-Bleeker or still better by the use of jets or other appropriate device such as an atodyne or rocket propulsor. With the use of this principle, it would be possible to produce helicopters of as large size as required for practical purposes for this type of aircraft which will always remain a short range craft.

The several uses of the helicopter mentioned above must be considered as covering only a part of the uses even at this early stage. At a later time, say five to 10 years from now, we can well expect a tremendous expansion of the use of the helicopter by a great variety of government and private agencies, as well as by private individuals. While a helicopter in every backyard garage will certainly not come within the next couple of years and may even not come for a considerable length of time, nevertheless, a vast expansion, far beyond the present use of the private plane can be confidently predicted within the life-time of this generation.

This is all in the future. However, the commercial helicopter may be considered as existing even at present. At our Bridgeport factory we have already a new four-place model on the production line. The craft will have a useful load of 1,250 pounds; it will have a hovering ceiling of 3,500 feet with the present engine and substantially more with a supercharged one; the maximum speed of this craft is over 100 miles per hour, and it cruises nicely at better than 80 miles per hour.

This is, of course, the beginning. In the future we expect to have both smaller and larger craft, according to the demand in the market.

U.S. Planes for Britain?

Great Britain is reported to be fearful of lagging in international airline competition, and for this reason is considering the purchase of American long-range transport planes for transatlantic operation until her own new types are ready. However, the final word rests with Britain's political leaders.

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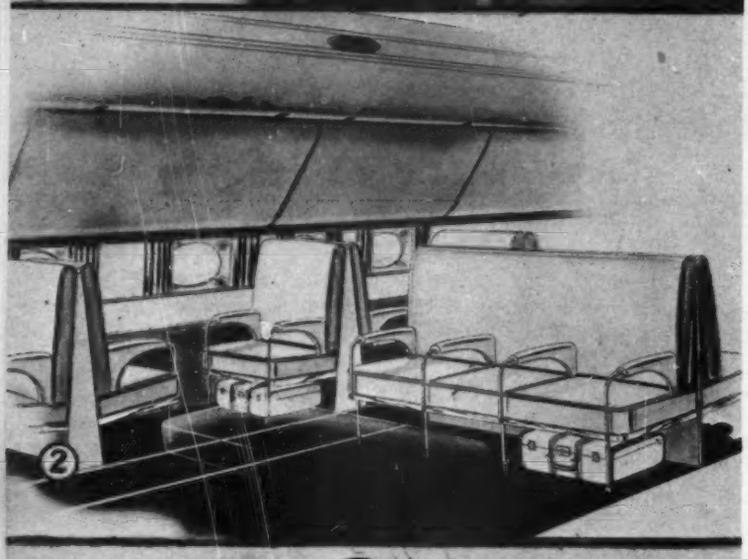
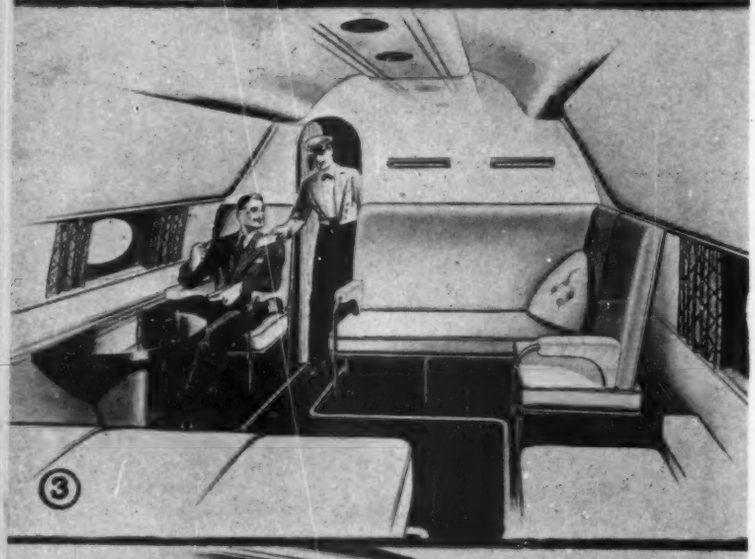
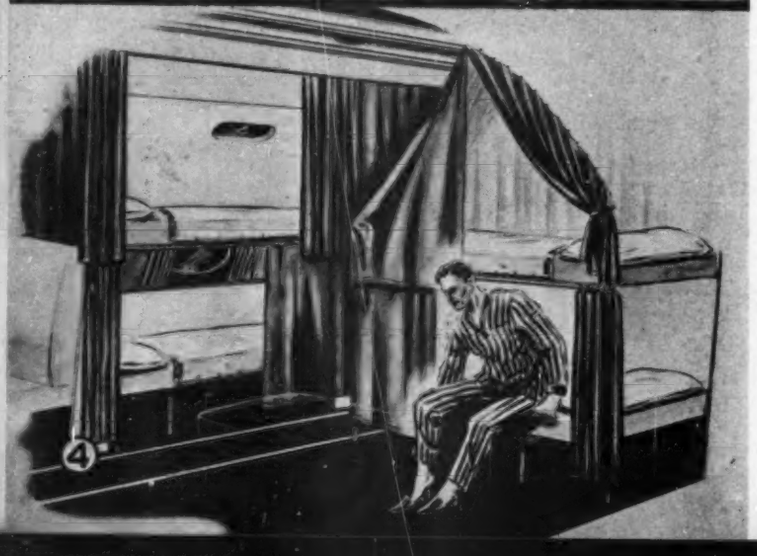






Martin Converts The Skymaster

PRETTY soon you'll be seeing quite a few luxury *Skymasters* flying the airlanes here and abroad—and the job of converting these four-engined aircraft from military to commercial use has been given to the Glenn L. Martin Company.

Contracts amounting to more than $13,500,000 have been signed by Martin with eight domestic and foreign airlines for converting the C-54's. The airlines represented are Pennsylvania-Central, Transcontinental and Western, Eastern, Pan American, Northwestern, Braniff, Chicago and Southern, Doderro (Argentina), and Cruzero de Sul (Brazil).

Formerly in the service of the Air Transport Command, the planes were declared surplus and quickly snapped up by the airlines because immediate delivery of new ships will not be possible for several months. While they were perfectly safe for military operation, they do not come up to the rigid specifications of the Civil Aeronautics Board; hence, the extensive revisions by Martin to make compliance possible.

Wing tips and empennage and other parts have come off for reworking. Various parts of the ship will be strengthened. Interiors are being ripped out down to the bare metal for complete re-equipping. Large, deep seats of the latest design, soft carpets, air conditioning, and the latest wrinkle in galleys for the stewardesses are included in the plans.

The *Skymasters* have served in every theatre of the war. One has 70 camels painted on its nose, indicating that many trips over the Hump. Another is the ship in which the late President Roosevelt flew to Casablanca and Teheran.

CONVERTING FROM WAR TO PEACE—(1) How the Skymasters looked when they were turned over to the Glenn L. Martin Company for rebuilding into luxury airliners. (2) When refitted, the big four-motored planes will boast these day accommodations. (3) The lounge, with accent upon ease and comfort. (4) And so to bed—in newly designed sleeping quarters.

New Airfreight Service

NOW to All TWA cities, Coast to Coast

Augmenting its airfreight service already established, TWA is now prepared to accept and deliver airfreight at any city on its transcontinental system. Local pick-up and delivery service are available; service to any point is fast and frequent. Special low rates are in effect for volume shipments of 3,000 pounds or more.

FOR AIRFREIGHT INFORMATION AND RATES, CALL YOUR LOCAL TWA AIRFREIGHT OFFICE.

TWA AIRFREIGHT

(*Continued from Page 5*)

The Post Office has announced that the air mail postage rate to Colombia is reduced to 15 cents per half-ounce or fraction.

Daily transatlantic airplane service has been inaugurated by American Airlines System, with four-engined Flagships departing from New York each Tuesday, Wednesday, Thursday, Saturday and Sunday, with the Tuesday trips stopping at Boston; from Washington each Wednesday and Friday, with the Wednesday flight stopping at New York, and the Friday flight stopping at Philadelphia, and from Chicago each Monday.

Standard Oil Company of New Jersey has published a new booklet, *Characteristics and Tests of Esso Aviation Products*, which is available in quantity lots or single copies without charge by writing to R. C. Oertel, Aviation Sales Division. The first section of the booklet deals with the nature, production and refining of petroleum and the relationship of the various refining processes to the finished product. The second section covers properties and uses of the finished products explaining the grades, characteristics and ratings of aircraft fuels, lubricants, and greases.

A fly-yourself hire service is being planned by an Australian company, which has bought 99 Australian-built Wackett training planes and 87 spare engines from the Commonwealth Disposal Commission, to hire out to any holder of a civil flying license or ex-member of the RAF who can prove experience in Wackett aircraft.

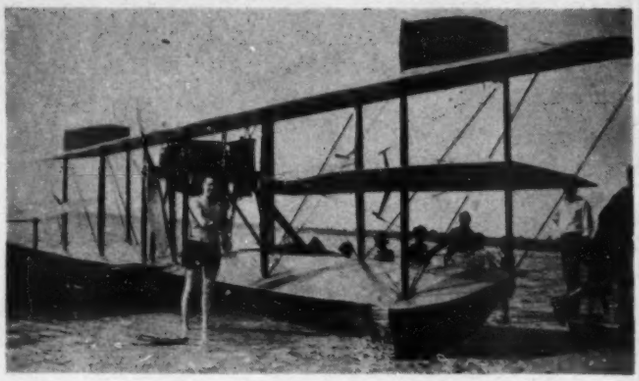
A reduction of transatlantic plane fares in the near future is anticipated by John E. Slater, chairman of the board of AOA. Both that company and its competitor, PAA, are currently charging $375 one-way to London, according to a temporary arrangement with the British Government.

The CAB has authorized the addition of Ogden, Utah, as an intermediate point between Rock Springs, Wyoming, and Salt Lake City, Utah, on United's transcontinental Route No. 1, thereby giving Ogden East-West service, in addition to the present North-South service furnished by Western.

Gill Robb Wilson has resigned as New Jersey State Aviation Director but will continue as consultant, in addition to writing on aviation for *The New York Herald Tribune*.

The management contract of Captain Eddie Rickenbacker, president and general manager of Eastern Air Lines, since 1938, has been renewed by the company's board of directors for a 10-year period. The airline is now engaged in a broad expansion program which includes applications for extension of its present domestic lines to the Pacific Coast, Canada, Kansas City and Minneapolis-St. Paul; and the establishment of foreign air lines to Mexico, the Caribbean and Latin America.

American Airlines has been authorized by the Mexican Government to issue Mexican tourist cards direct to pleasure travelers who fly AA's Flagship route into Mexico. Therefore it is now unnecessary for citizens of the United States and Canada to call on Mexican consulates for permits, which may be obtained for $2.10 at the airline's offices. The Canadian citizen must have a passport in addition to the tourist card.



The only purpose we have in reproducing this old picture is to prove that even a quarter-century ago air transportation was a serious business. Hiram Rubin of New York (above), pioneer motion picture man, flew in this four-cylinder flying boat from Tampa to St. Petersburg, Florida, took a dip, and returned the same day—all for two dollars. The photograph was taken in February, 1920.

A plan for a tie-up between rail and helicopter shuttle service was laid before a recent CAB hearing in New Orleans, by Ralph Budd, president of the Chicago, Burlington & Quincy Railroad. Budd explained that the helicopters would fly from the small communities to the nearest railroad station, where servicing and ticket selling could be done by ground crews working for the railroad.

Air fares of the major airlines have dropped to an average rate of 3.2 cents per mile in terms of the 1940 dollar, according to W. A. Patterson, president of UAL. The airline chief explained that the purchasing power of the consumer's retail dollar has dropped from $1.00 to 71 cents since 1940, while all major airlines have reduced their fares from 5½ to 4½ cents per mile.

To assure safety in the establishment of world air routes, the CAA is running many "proving" flights to foreign points, with tests now under way for the AOA run from LaGuardia Airport to London by way of Stevensville, or Gander Lake, Newfoundland; Santa Maria, one of the Azores Islands; and Lisbon.

Aeronca Aircraft has announced an immediate expansion program which will increase production of light planes from the present daily capacity of 20 to 35 per day at the Middletown, Ohio plant. The present production model is the tandem, two-seater *Champion*, to be followed by the side-by-side, two-seater *Chief*, and later, by the low-wing, simplified control tricycle landing gear, two-seater *Chum*.

United Air Lines has opened its operations into Detroit with two daily westbound flights to Chicago and such cities as Des Moines, Omaha, Denver, Cheyenne, Salt Lake City, Boise, San Francisco and Pacific Coast points. Two eastbound flights provide new intercity nonstop service between Detroit and Philadelphia and between Detroit and Akron-Canton, both trips terminating at New York City. The company has also added five new round trip intercity flights on the Pacific Coast, and two new Seattle-Portland round trips.

Executive offices of American Overseas have been moved from 25 Broadway to the general offices of the American Airlines System, 100 East 42nd Street, New York City.

Northwestern University has announced that it will establish on its downtown campus an Institute of Aeronautics, which will conduct research in the general field of aeronautics and will offer a limited amount of instruction at the graduate level to persons interested in specified aspects of aeronautics.

On February 15, Continental Air Lines will inaugurate service over a new air route linking Tulsa, Oklahoma with El Paso, Texas via Oklahoma City, Wichita Falls, Lubbock, Hobbs and Carlsbad.

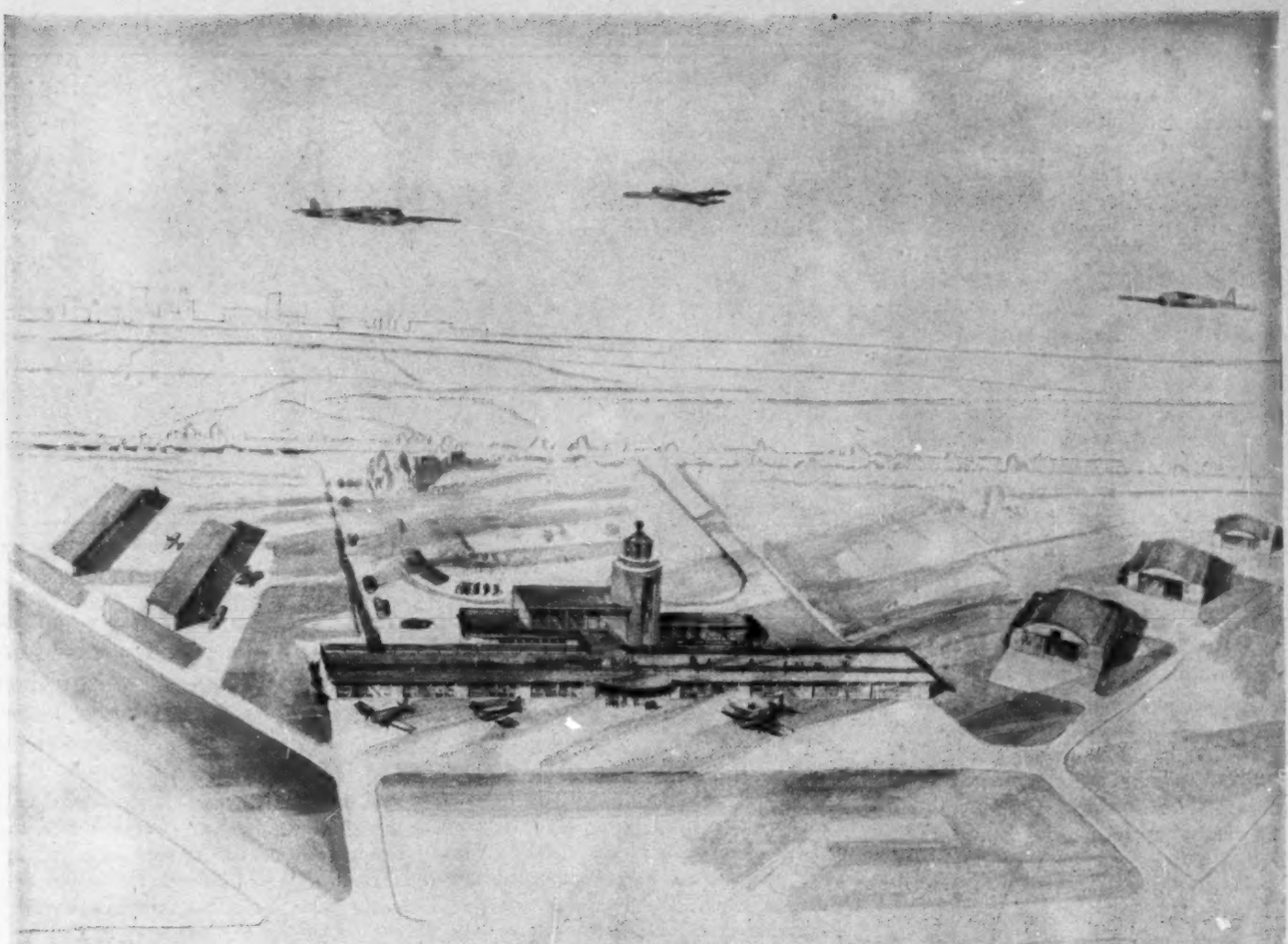
Columbia Airlines has petitioned the CAB for authorization to expand its service to include nine new routes, taking in points on Maryland's Eastern shore, Virginia, West Virginia, Delaware, Pennsylvania, New Jersey, and New York.

United has taken delivery of 14 four-engined, 220-mile-an-hour Douglas C-54s, purchased from the RFC, and now being converted for passenger-cargo service at the Douglas Aircraft Company at Santa Monica. UAL expects to begin receiving its fleet of 300-mile-an-hour, four-engined Douglas DC-6s in the summer of 1946, and also is studying designs for a new fleet of high-speed, twin-engined planes which will begin replacing the company's present fleet of DC-3 *Mainliners* and *Cargoliners* in 1947.

An upsurge in tourist traffic in the Pacific area, as soon as transportation facilities are provided, has been predicted by Lloyd Finlay Cecil of the American Express Company, who lived in the Far East for 20 years.

Newark Airport, used by the Army only during the war, and recently returned to the city for commercial airline use, is again receiving daily service from TWA, and will soon be served by NWA.

Captain Eddie Rickenbacker will be host and historian on a series of half-hour dramatizations entitled, *The World's Most Honored Flights*, to be presented by the Longines-Wittnauer Watch Company over a selected network of 150 stations in the United States and Canada. The series, which is written by Colonel Hans Christian Adamson, and is to begin during the week of February 3, covers the outstanding "firsts" in American aviation progress.



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SKYWAY FOR

By DR. JOHN

Preside

TRANSPORTATION

There used to be a day when so-called expe said that the airplane could never prove i they were wrong—so wrong that they'd pref For example, Dr. Crane believes that "ultim senger revenues." And

NOW that the war is over, international air transportation will offer many opportunities for increased international trade. These greater trade opportunities will be occasioned by extensions of service improvements in aircraft speeds and pronounced reductions in passenger fares and cargo rates.

The effects of improved air transport on the volume and character of international trade can best be described by separate treatment of passenger and cargo traffic. This is true, even though for the first few postwar years passengers, mail and cargo are likely to be carried in the same planes, with passenger traffic predominating. If anticipated improvements in aircraft design and consequent reductions in operating costs are realized, however, we should see by 1955 specialized air freighters in service carrying nothing but cargo at rates, on a ton-mile basis, only one-half to one-third those of passengers.

Let us examine, first, the probable effects of international air passenger travel on our foreign trade position. To do this, an estimate of passenger traffic volume is necessary. Estimates made by various specialists in the field vary rather widely, the differences resulting primarily from differences in the assumptions made with respect to the future level of fares and economic activity, and different postwar years chosen. All forecasters agree, however, that postwar passenger traffic will exceed prewar by several hundred percent.

The Author

A native of the Windy City—1903 is the year—Dr. John B. Crane was educated at Northwestern, Harvard, and the University of London. He served as state editor for the Fort Wayne *News-Sentinel* from 1924 to 1925. Soon afterward he turned up as an instructor in economics at Simmons College and Harvard, and later as assistant professor of economics and lecturer at Northwestern, as well as a senior economist and editor of the *Monthly Review of Transportation Statistics*, ICC.

Dr. Crane has also served as principal economist and chief of transportation for the Bureau of Foreign and Domestic Commerce, and consultant on inland European transport for the Department of State. In 1944 he became director of economic and marketing research for the Glenn L. Martin Company. He has written numerous articles on economics and air transportation; also conducted confidential studies for the United States Government on railway, highway, and waterway transport. Dr. Crane is president of Transportation Analysts, Inc., Washington, D. C.

A composite estimate of international passenger air traffic for 1950 can be made by the summation of the estimate of Dr. Edward P. Warner for United States-European travel, of Pan American Airways for United States-Latin America and United States-African travel, and of the Glenn L. Martin Company for United States-Asiatic and United States-Australian travel. The year 1950 is taken to represent early postwar years. The total for this year is estimated at 2.1 billion revenue passenger-miles.

This total is derived as follows: to Europe, 800,000,000 revenue passenger miles; to Africa, 100,000,000; to Latin America, 1,000,000,000, and to trans-Pacific areas, 200,000,000. At four cents per passenger-mile this should amount to expenditures of $105,000,000.

Van Zandt Forecast

By 1955 J. Parker Van Zandt looks forward to a level of air passenger fares of approximately three cents per mile, and, in consequence, a tremendous increase in air travel. He anticipates by that time international air passenger travel amounting to four million persons, and a "perform" of 30 billion passenger-miles annually. (See November, 1944, AIR TRANSPORTATION.)

If Van Zandt's figures are cut in half, and we assume there will be two million passengers in 1955, generating 15 billion passenger-miles of service, this would amount to $450,000,000 spent annually by Americans on air trips abroad. How much would these travelers spend on goods and services *within* the foreign countries visited? Probably not nearly so much as was spent by American travelers in the 1920s and 1930s, when travel costs were high and travel was largely restricted to those in high income groups. Low air fares and high speeds will lead to mass travel by those in lower income groups; hence, to lower per capita expenditures while abroad. Let us be conservative and assume each American traveler spends only $200 in the foreign country or countries he visits.

On this basis, the two million American travelers would spend $400,000,000 annually. These expenditures would be "invisible imports" and would have the same effect on dollar exchange as the purchase of the same sum for foreign merchandise by American importers. In other words, American travel expenditures abroad increases the ability of foreigners to take our exports, and, since we are a creditor nation, helps bring about a better balance of trade. Looked at in still another way, it may be said that such tourist expenditures are equivalent to a reduction in tariff barriers, and exert the same effect as a reduction in protective tariffs.

The effects of such passenger air travel to foreign countries on our foreign trade position should not be overestimated, however. A high level of international trade is dependent on a high level of production and national income. It is this high level of production and income which is primarily responsible for both large travel expenditures and a large volume of international trade. It is doubtful, for example, whether expenditures of air travelers abroad in 1955 will exceed five per cent of our total expenditures in that year for all foreign goods and services.

International air cargo traffic in the

)REIGN TRADE

JOHN B. CRANE

President

TATION ANALYSTS, INC.

called experts smiled wisely over their cocktails and ver prove itself as an effective cargo-carrier. But they'd prefer not to talk about the subject today. that "ultimately, goods revenues may surpass pas- nues." And good reason, too!

early postwar period may be expected to grow at a more rapid rate than passenger traffic because of the small volume of air cargo which moved in prewar days. If reductions in operating costs should permit passenger fares of three cents per mile by 1950, then air cargo rates should come down to an average level of 20 cents per ton-mile, with classified rates as low as 10 cents per ton-mile on special commodities.

Air Cargo Tonnage

With air cargo rates averaging 20 cents per ton-mile a few years after the war, it is estimated that merchandise exports by air from the United States will amount to 29,300 tons annually. This tonnage will be distributed as follows: to Latin America, 8,600 tons; to transpacific points, including Hawaii and Alaska, 7,900 tons; to Africa, 800 tons; and to Europe, 12,000 tons. (The figure for Europe must be considered a very rough estimate in the absence of any special analysis of air cargo potential between the United States and that continent.)

In view of the lack of balance between air cargo exports and imports, as revealed by the Glenn L. Martin studies of air cargo potential traffic between the United States, on the one hand, and Africa, South America and Asia, on the other, the export tonnages shown do not result in corresponding import tonnages. It is estimated that total cargo ton-miles of service will amount to 98.-500,000 annually. This will yield cargo revenue to all international air carriers of approximately $19,700,000 per year.

A comparison of these cargo figures with those for air passenger traffic for the year 1950 indicates cargo revenues equal to about 19 per cent of passenger revenues. With each succeeding year, air freight and express are likely to become an *increasing* percent of total revenues. *Ultimately, goods revenues may surpass passenger revenues.*

Because of the nature of most of our commodity exports and imports, only a small fraction of all goods shipped will be routed by air. In terms of tonnage, air shipments in the first few postwar years are likely to amount to only a fraction of one percent of our total international trade.

Of the many thousands of commodities which move in international trade, the great majority show values of only a few cents per pound, and move at steamship freight rates of less than one cent per ton-mile. Such commodities offer poor prospects for carriage by air in the foreseeable future. Among these thousands, however, are several hundred products which possess one or more characteristics which make them likely candidates for carriage by air.

The four most important of these characteristics are high value per pound, perishability, fragility, and style-factor or rapid rate of obsolescence. Perhaps the most important single characteristic is high value per pound, but even this factor is not in all cases sufficient to justify premium air charges.

How high a value per pound is necessary to make a commodity a candidate for air shipment? There is no simple or single answer to this question. It depends on several factors. One of these is the distance the shipment moves. The longer the length of the haul, the higher must be the value per pound, since aggregate air charges rise with distance, and not over a certain percentage of the value of a shipment can be absorbed by transportation charges without discouraging movement.

In the case of countries adjacent to the United States many commodities are good candidates for air shipment if they have a value between 25 cents and 50 cents per pound. For distances of 1,000 to 3,000 miles commodities should be valued at 50 cents a pound or above. For distances from 5,000 to 10,000 miles minimum values per pound should range from $1.50 to $2.50 per pound, depending on distance.

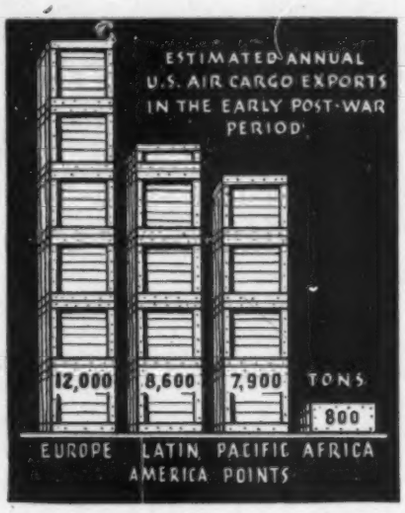
Because of the distance factor, Asiatic countries are the poorest and the southern half of South America and Africa rank next in terms of air cargo potential, other things remaining equal. Conversely, Middle America offers the best prospects for air cargo shipments, not only because of the comparatively short distances involved, but also because of exceptionally poor surface transport facilities, and the nature of the economies of these areas. The above estimates assume air cargo rates averaging 20 cents per ton-mile, airport to airport, and classified rate structures with minimum rates of 10 cents per ton-mile.

The forecasts of postwar air cargo have been based on detailed studies of published international trade statistics for the year 1939, with adjustments made for changed conditions of production and trade anticipated after the war. What is sorely needed is a series of individual case studies of specific export industries, and of particular products manufactured for export. The Bureau of Foreign and Domestic Commerce of the Department of Commerce has done a good pioneering job in its series of air cargo studies between the United States and Latin America. (See October 1945, AIR TRANSPORTATION.) The Bureau could further assist in the

Dr. John B. Crane

promotion of foreign trade by undertaking a series of air cargo research studies along the lines just mentioned. The Government is better equipped in many respects for such a task than any private or industrial research organization.

There are special reasons why such case studies might well begin with an analysis of exports to Latin America. In this area the prospects for air cargo are especially good. Not only that, but a large part of Latin America is naturally tributary to the United States, which would give us an advantage in competition with European international carriers. To points south of Brazil keen competition with European international carriers may be expected, and it is highly important that we hold our own in such competition. The immediate need is a comprehensive program of Government-sponsored market research.



HIS STUDY CITED—J. Parker Van Zandt is looking forward to air passenger fares of three cents per mile by 1955, with 4,000,000 air passengers a year. Even with that passenger estimate cut in half, Dr. Crane points out, it would mean $45,000,000 spent annually on air trips abroad.

Finally, it is my belief that international trade can be promoted most effectively by creating conditions in air transportation which lead to the most rapid rate of technological improvement, reduction in rates and improvements in service. Experience demonstrates that these conditions exist where competition prevails, provided competition is limited by wise Government regulation. The Government should authorize at least two American-flag carriers to every major trade region of the world, and more than two to all areas where the anticipated volume of traffic will permit profitable operations for three or more carriers.

Intra-State Air Shuttle

Daily round-trip service from La Guardia Field at New York City to the Tri-Cities Airport, Endicott, New York, will start next month, according to Dean Alfange, Empire Airlines president. Plans are scheduled for a service enabling business men to leave La Guardia Field for Binghampton, Endicott and Johnson City, and return to New York the same day.

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REG. U. S. PAT. OFF.

By L. A. GOLDSMITH, *Economic Analyst,* AIR TRANSPORTATION

PLAN FOR MANHATTAN

LAST October, John F. Budd, publisher of AIR TRANSPORTATION presented his streamlined original plan for Westair Helicopter Terminal. His plan called for the construction of a helicopter airport terminal to be located directly behind the General Post Office at Ninth Avenue and West 33rd Street, New York. Significantly, in the light of another airport terminal to be discussed in later paragraphs, Mr. Budd's original plan covered a simple design of construction—"a flight deck not unlike that of an aircraft carrier, which would form the roof of a three-story structure." In this connection it is interesting to note that Mr. Budd also envisaged a further possibility, when he pointed out that "Westair can readily be increased in size by additional floors, and/or *extending down over the railroad tracks to the Hudson River.*"

The objective of the proposed helicopter terminal is to cut drastically the transportation time of incoming and outgoing air mail to and from the General Post Office. In addition, there is the further thought that such a terminal would also greatly expedite the movement of air passengers and air cargo between the heart of Manhattan and the airports in the metropolitan area—LaGuardia, Idlewild, Newark, Westchester, and MacArthur.

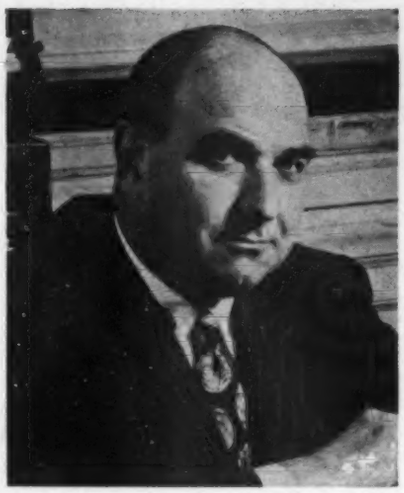
The complete details of Westair were contained in the October, 1945, issue of AIR TRANSPORTATION, and won press and radio notice from coast to coast.

In these days of multi-billion dollar financing for war and its aftermath we should not be startled at a peacetime project which involves an outlay of $3,000,000,000, to be built and operated by a special "Authority." Such would be the estimated cost of a proposed air terminal and industrial center for the City of New York. This project is the brainchild of William Zeckendorf, vice president of Webb & Knapp, New York real estate brokers. Mr. Zeckendorf is described by one of his competitors in the real estate field as "one of the really great real estate men of the country," any of whose ideas are "worthy of the most serious consideration."

The proposed area of development for the air terminal and industrial center would be about the size and shape of Central Park. It would cover the vast area between 24th and 71st Streets, extending from Ninth Avenue to the Hudson River. The assessed valuation of this land and the present buildings now standing is about $500,000,000. The construction cost would approximate $2,500,000,000. This huge project would consist of a network of 10-story buildings topped by an aircraft carrier-type of landing deck, 12,000 feet long and 3,600 feet wide.

The airplane landing deck would be 200 feet above the street level. Fifty

THE ZECKENDORF IDEA—Visualized scene below the 10-story high aircraft carrier-type deck proposed for the heart of New York. Cutaways show operations above and below.



William Zeckendorf

feet below the runways would be a hangar for the storaging, servicing, and repairing of planes. This, in turn, would rest on the roofs of possibly 35 buildings, each about 800 feet square. Elevators would clear the runways of incoming planes and lift outgoing aircraft to the deck for take-offs. Numerous additional elevators would link the tremendous hangar with the buildings beneath. The structures envisaged for construction below the flight decks and hangar, are suitable for all types of industry. Each building can provide 640,000 square feet on each of its 10 floors. In addition the industrial area would have plenty of space for bus terminals, railroads, and shipping lines, as well as huge facilities for automobile parking. On the question of parking automobiles, Mr. Zeckendorf has this to say:

"Here is a solution to the city's parking problem. Allowing 200 square feet for each automobile, 3,200 cars could be parked on a single floor bringing the city about $3,000 a day in revenue. The more floors filled with cars, the more revenue!"

Authority Question

The project has been thought out and planned on an overall basis of great vision and foresight. Mr. Zeckendorf emphatically stresses the fact, however, that the firm of Webb & Knapp has no financial or self-interest in the matter. They own no property in the area which would be condemned and purchased under the Authority plan (similar to the present Authority of the Port of New York). It is Mr. Zeckendorf's opinion that the project might require an Authority which would embody a combination of Municipal, State and Federal functions.

The architect who designed these plans is Dr. Michael Rosenauer, and the artist's drawings were executed by Rene Brugnoni. Some $25,000 cover the cost of the architectural layout and planning.

According to the father of the brainchild, the terminal would bring practically every city in the country 300 miles nearer to New York. He also maintains that his proposal would do much to block the present trend of migration of New York industries to other localities, and also serve the purpose of bringing new industries to New York.

What would be the next step in regard to practical developments for financing and constructing the $3,000,000,000 terminal? Well, Zeckendorf has an answer to that one. "The next step," he said, "is to set up a special committee of representative leaders to secure the preliminary financing and promote the knowledge of the project so that public opinion will be behind it."

Then comes the purchase of the land and the present buildings now in the area contemplated for this project. The first part will, in Zeckendorf's estimation, take the better part of two years. After that three years more will be required for the construction of the buildings and the "carrier" airfield.

"Who thinks now of flying from New York to Philadelphia?" is another question Zeckendorf asks pointedly. And then he answers in the same breath: "Of course it is out of the question, when you can make the trip by rail in about the same time it takes you to get out to the New York flying fields."

The entire project, he claims, would pay for itself in 50 years through the rentals which would be secured from the terminal buildings space and the ground area. The rentals would cover 200 million square feet of space, exclusive of the airport landing and hangar decks. At 75 cents a square foot the rental space would total $150,000,000 a year in revenue.

Zeckendorf also pointed out that the proposed Authority would have further possibilities of additional financial returns, as, for instance, in connection with the railroads. The Authority would buy from the roads all their present subsurface rights and lease back to them rights to the tracks going into the air terminal. Under his plan, all rail and most of the steamship lines would become part of the project. The B & O, the DL & W, and the Erie would be invited to tunnel into the city and put a third rail terminal into this area, where, Zeckendorf believes, the majority of the industry and transportation facilities of the city would then be concentrated.

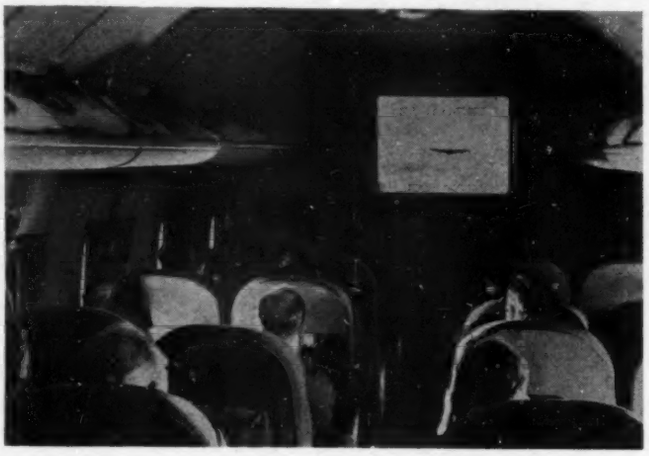
It is also significant that extraordinary interest in the plan has been shown throughout the country, as well as from two foreign countries—Russia and Sweden. These are studying the plan to see if it can be adapted to suit their national conditions and requirements.

Movies in the Sky is PAA Innovation

Pan American World Airways' newest aircraft now carry motion picture projectors and sound equipment, permitting up-to-date movies under flight conditions. Not only do the films provide the regular-type entertainment, but they are also means of acquainting air travelers with the countries they are to visit.

The first showing last month included the full-length feature, *The House on 92nd Street. The March of Time*, short comics, travelogs, and color features will be shown in addition to full length films.

A modified 16 mm. projector, shock-mounted in the aft section of the aircraft, throws an image on a standard screen mounted on vibrationless. The screen is so hung that use of the door to the crew compartment forward and the flight operating area is not restricted. The sound track is carried to the passengers through standard speakers mounted in the ceilings of the cabin. Specially designed and constructed light-weight amplifiers are used for conveying the sound. No special source of electrical current has been set up, the power being drawn from the regular power source on the aircraft.



ENTERTAINMENT IN FLIGHT—Shown at night on the over-water leg of PAA's New York-London flight, passengers are treated to the latest Hollywood releases.

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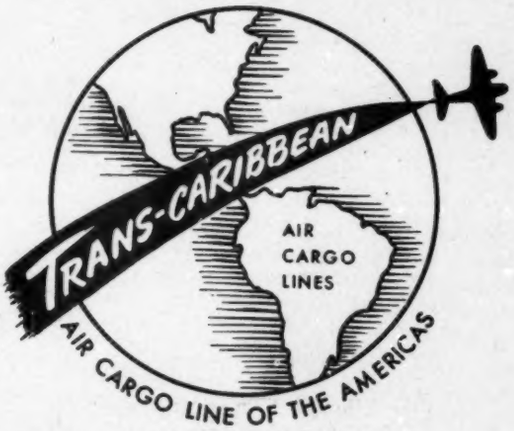

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Air Shippers' Research

By EMERY F. JOHNSON
Secretary, Cargo Traffic Section
AIR TRAFFIC CONFERENCE OF AMERICA

SPURRED by the tremendous overnight growth of air cargo, the 24 domestic and international airlines of the United States today are leaving no stones unturned in intensifying the promotion of this medium of transportation. To that end they have established a Shippers' Research Division, which in effect, will afford the shippers and air transport operators alike a clearing house for technical information governing the speedy and safe delivery of airborne goods in increasing quantities.

The scope of activities of the new division of the Air Transport Association of America stands to vary as progress is made in the new undertaking, but its primary duties at the outset will be to study and prepare regulations covering the safe transportation of hazardous commodities.

Therefore those articles that may bring harm as well as business to the air carriers is the initial concern of the division whose interest is threefold. First, of course, is to promote safety in flight, which, secondly, will protect air shippers by helping to reduce the possibility of loss and damage, thereby eliminating claims. Third, the assurance of continued safety and protection of shippers is bound to encourage new cargo business.

Need Cited

The immediate need for this work is manifested by existing regulations as set forth by the Civil Aeronautics Board. Air Express tariffs, and the tariffs of the individual airlines which are sometimes conflicting and inconsistent as they relate to the transportation of hazardous materials.

Sum total of the present set-up has resulted in cases where unsafe items were carried, and where acceptance of a questionable commodity by one airline has been followed by rejection on the part of another. Adoption by the CAB of certain provisions of the Interstate Commerce Commission *Regulations for the Transportation of Explosives, Express, and Baggage Services and by Motor Vehicle (Highway), and Water* has not appreciably improved the situation in view of the fact the regulations were primarily designed for ground transportation.

As a result, the task of the Shippers' Research Division first will be to study present air cargo items and their relation to pressure changes (due to altitude), corrosive properties of materials with respect to aluminum alloy aircraft and light weight packaging. From this program of study should emerge the publication of governmental and tariff regulations, lending to both shipper and carrier condensed, accurate and uniform regulations dealing with the transport of airborne goods of virtually every description.

The division will divide its duties into the following categories: formulation of definitions and policy concerning all phases of transportation of any hazardous goods by air; study of all materials with respect to their physical properties as they are affected by the conditions encountered in air transportation, and a study of methods of packaging of all hazardous materials. Subsequently the division will classify types of hazards such as inflammable, magnetic and radio-active materials and those producing toxic, noxious and corrosive fumes.

Classes of materials listed in chronological order of priority assigned for work to be done on them follows:

The first to be investigated will be inflammable liquids. In this connection, the most important item needing clarification is the question of what constitutes a safe minimum flash point. For instance, one airline may at present set the safe minimum at 110° F., while others may set it at 80° F.

Such considerations as lowering a flash point with altitude, significance of explosive limits, spontaneous ignition temperatures, vapor pressure and other related points have never been evaluated. For that reason a study of these properties as they affect safe air transportation is a necessity. Outage tables designed for ground use will probably not be valid for use in the air, in which case new outage tables must be formulated.

Since present Civil Air Regulations permit the carriage of highly dangerous compressed gasses such as hydrogen, butane, chlorine and sulphur-dioxide, a careful study of present requirements for cylinders viewed in the light of the type of handling and the conditions which they will encounter when being transported by air. In this connection, it is safe to add that it would be desirable to standardize on a single identification system for cylinders of compressed gasses.

Specialty Category

There are certain specialities upon which there is a demand for carriage by air such as photo flash bulbs. Studies will be made to determine under what conditions these bulbs may be made to ignite, what if any type of bulb cannot under ordinary conditions ignite, and in what manner flash bulbs may be packed so that ignition of one or more will ninimize the hazard.

Another item that falls in the specialty category and as such should be probed is safety matches. Still another specialty item is nitrate motion picture film. Present packaging requirements for this article needs to be examined, inasmuch as there is some question concerning its carriage under existing packaging regulations. Next comes radium and radioactive materials. There is need for a definite regulation providing for safe air transportation of radioactives.

All Class B and C explosive, certain of which are acceptable under the CAR, will also require considerable study, since it is felt that present regulations are not adequate. The airlines desire to have packaging requirements for those explosives which investigation indicates will be acceptable for air transportation.

All oxidizing agents shall be studied to determine which ones may be safely carried and to determine proper packaging or bottling specifications for

Even Toy Trains have taken to the Air!

At Cleveland Municipal Airport, Lawrence W. Cowen, president of Lionel Corp., presents air-borne electric train to Miss Anna Buchanan, director of the Cleveland Fresh Air Camp for Underprivileged Children, as Santa looks on.

WHAT kind of merchandise can be shipped profitably by Airfreight? Well, we're handling furniture and spinach, grapes and penicillin, dresses, yeast, stoves and shoes (among many others) — and toy trains, too!

To satisfy as quickly as possible the long pent-up demand for toy electric trains, the Lionel Corporation, of New York City, has been shipping its trains via American Airlines Airfreight to cities from coast to coast, including Buffalo, Detroit, Cleveland, Chicago, St. Louis, Dallas, Fort Worth, El Paso and Los Angeles. Single shipments of Lionel toy trains have been as large as 5,600 pounds.

This is but one illustration of how shippers in many and varied lines of business are making use of Airfreight's advantages — speed, careful handling, economical packaging and simplified paper work, at low cost. Shippers of merchandise cargo already have demonstrated the profit-filled possibilities for new merchandising inherent in day-in, day-out use of Airfreight.

Our Airfreight sales engineers and research specialists are ready to study your individual situation and your specific problems. They'll show you how Airfreight can work for you. For complete details call or write to Airfreight Division, American Airlines, 100 East 42nd Street, New York 17, N. Y.

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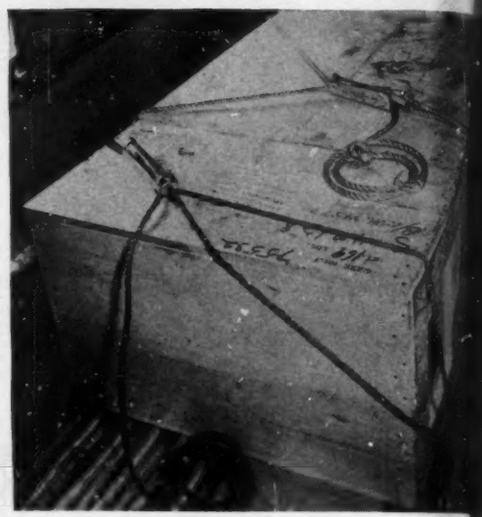

them. All inflammable solids as a class shall be studied, including such materials as phosphorous, pyroxyline and magnesium. Recommendations relative to the carriage of magnetic materials are also in the making.

There are scores of materials that may be carried by air if properly packaged, although under present ICC regulations the transport of these articles may be questionable. Therefore, all of the mentioned classes of hazardous materials should be studied with a view to the method of safe packaging and handling.

Among the miscellaneous goods whose development would be desirable include a vaporproof self-pressure equalizing can for flammable liquids, coupled with possibly a second vapor-tight can for paints and pigmented materials which fall in the inflammable class. Still another is a good absorbent material for packing containers of liquid, and some consideration should be given to the possibility of using unbreakable glass bottles for certain items.

These studies by the Shippers' Research Division will frequently involve library research on the properties of the materials and laboratory research on the articles as their properties are affected by pressure and temperature changes. A program of analysis and testing of present packaging regulations will also be required to set up packaging specifications in many instances.

The Air Transport Association has already made tentative arrangements with an independent laboratory to carry on experiments for the division. However, research work to be carried on regarding pressure chambers ond other stratospheric factors will require additional facilities.

Approval of plans for the creation of the separate and independent division was granted by the Board of Directors of the ATA at a recent meeting. Its operation will begin as soon as an expert chemist, experienced in both general and laboratory work, can be obtained as director. In short, this action is another in a series of forward steps on the part of the airlines to handle greatly increased quantities of air cargo, including many new commodities with an even greater degree of safety, lower loss possibility and less cost, through the findings of a reliable research medium.

Philippine Air Lines to Resume Operations Soon

SCHEDULED commercial service over the routes of Philippine Air Lines, suspended at the time of Pearl Harbor when the line's equipment and personnel were turned over to the United States military services, will resume in the near future according to Jack Frye, president of Transcontinental & Western Air. At the same time, Frye announced that TWA is acquiring 28 percent of the capital stock in the reorganized Philippine corporation.

The National Development Company, an agency of the Commonwealth of the Philippines, is the largest single stockholder in the business. Other principal stockholders in the company include Colonel Andres Soriano, former Minister of Finance in the Philippine Government, Elizalde & Company; and the De la Rama Steamship Company.

Mr. Frye also disclosed that Arthur Stewart, Western traffic manager for TWA, was being elected vice president of PAL, and that Colonel P. I. Gunn had returned to the post of operations manager which he held prior to the outbreak of hostilities.

TWA is to provide certain technical personnel and assistance in addition to making its facilities available to PAL for training of personnel. He said that the airline had purchased five DC-3 type airplanes from the United States Government, which are now being converted for commercial use in the company's own shoes.

Philippine Air Lines originally started operations in 1940, flying passengers, cargo and mail from Manila to Baguio and Manila to Cebu via Paracale, Legaspi, Catarman, and Tacloban, and from Legaspi to Cebu—a total of 906 miles of routes. Other services from Manila to Cebu, Suri-

(Continued on Page 41)

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The Vets Place A Stake in the Sky

TAKE a bunch of World War II veterans, mix a strong belief in the future of air cargo, and what have you?

The answer is: The Veterans' Air Express Company.

If you want to go back to May, 1945, you'll trace the original idea of the new airline to a youthful Air Force gunner, Saunie Gravely. He worked swiftly. Three months later, VAE was incorporated under the laws of New Jersey State.

The vets haven't stumbled along in their aims. There have been surveys conducted in many states to determine the best areas for transportation as well as a suitable basis for rate charts. But the going can be rough in other ways.

Starting from scratch is no cinch. For the vets it meant heading toward Washington to purchase surplus Army aircraft, engines, tools, and other necessary equipment. Growing pains come hard. No sooner was one problem solved than another one appeared. There were various difficulties to be surmounted before commercial flights could be inaugurated.

GUIDING LIGHTS—Heading the Veterans' Air Express Company are (left to right): Saunie Gravely, president, and Harvey G. Stevenson, vice president. The president is a former Army Air Force gunner.

But when you have dogged determination—the same kind that wins wars—plus a quantity of good, old, American horsesense, things have a way of righting themselves.

For example, consider the personnel make-up of VAE. From the very beginning, the organization has been wholly operated and partially owned by honorably discharged members of the United States Army Air Forces. Most of these men saw war service as pilots, gunners, navigators, or mechanics. Fact is every combat air force is represented in the new cargo airline.

Full Steam Ahead

The nucleus of the outfit is concentrated in these men. With stock in the company safely tucked under their belts, the vets have rolled up their sleeves to build VAE into what they frankly hope will become a major air line.

VAE has purchased three *Skytrains* whose last Army address was Bush Field, Georgia. Three more are earmarked for the company. Gliders are in line for commercial operation; but the East Coast has a weather all its own, so use of these motorless transports must wait until the more balmy months roll around. Meanwhile, a CG-4 is being readied.

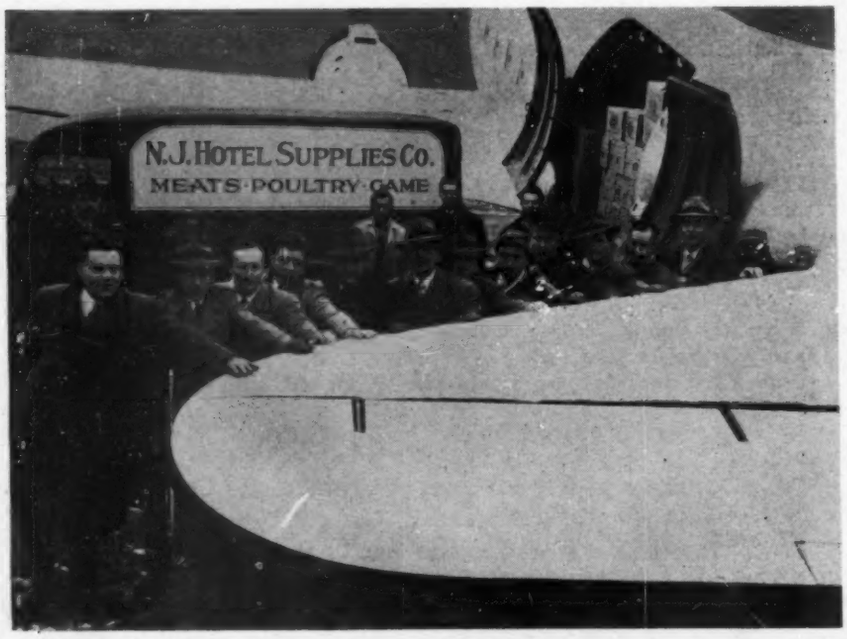
Another holdover from the war is the jeep. It's a great sight watching flying personnel pile into one of these Rough Riders and scoot from the executive offices to Newark's big terminal.

Veterans' Air Express is no longer an unknown. Atlanta, Miami, and Houston airports have watched the airline's planes come in with precious loads of cargo, and sent return loads to Newark. Among the air-shipped merchandise have been seafood, metal products, flowers, and penicillin.

Gravely, who heads VAE as president, shows a deep understanding of the problems facing air transportation.

"One of our biggest tasks," he says, "is to show every business enterprise

(*Continued on Page 47*)



THE VETS LINE UP—Prior to take-off of one of VAE's three Douglas Skytrain cargo-planes, veteran personnel of the new airline show their faces to the camera. Carga flights have been made from New Jersey to Florida, Georgia, and Texas.

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Globe Freight Airline Eyes the Other Americas

OVER in Hartford, Connecticut, there's a chap by the name of James N. Laneri who is doing something about this business of flying freight. To get right down to it, he heads the newly organized Globe Freight Airline, Inc., which was incorporated under the laws of the State of New York, and soon will operate an all-cargo air service between Boston and Latin America.

Laneri is no newcomer to aviation, having nearly a score of years in aviation in his vest pocket. That ain't hay!

He started as a fixed base operator in 1927. Highlights of his career include flying for that famous exploring pair, Martin and Osa Johnson, on their expedition into the East Indies; for Pan American World Airways, as captain in the South American and Caribbean areas; for American Export Airlines, making two dozen round trips across the North and South Atlantic, and nine journeys between New York and Natal, Brazil; and for the Douglas Aircraft Corporation as a test pilot.

During the past year, Laneri has been devoting all his time to the activities of Globe Freight. For the operations his company has in mind, he has settled upon the Douglas *Skymaster* and/or the Fairchild *Packet*. GFA, which will make intermediate stops along the Eastern Seaboard, will use New Orleans as the port of entry. In Latin America, its planes will land in the West Indies, Colombia, Venezuela, Panama, Costa Rica, Guatemala, and Mexico.

Although GFA filed under Section 401 of the Civil Aeronautics Act (this assumed a schedule operation), the new airline's officers believe that the operation will be practicable if conducted on a non-scheduled basis. It was for its own protection that the company requested the certificate of public convenience.

"While Globe Freight has confidence in the ultimate success of such an operation," Laneri said, "it concedes that the experimental nature of the project will require a large investment, and that it should have the support which a certificate from the board awards."

Capt. James N. Laneri

The company has conducted an intensive survey of the economic characteristics of the area proposed to be served, and has concluded that the operation is financially reasonable without income from the passenger or even the mail transportation business. The tabulations of air travel to and from Latin America areas show that the new cargo airline will serve foreign points which accounted for 90 percent of all passenger travel to and from Latin America using the Miami gateway in 1940 and 1941. A tabulation of passport applications to the West Indies and Latin America for the calendar year 1938 shows that Globe Freight will serve states which accounted for half of all such transport applications.

Expected Load Factor

On the basis of all available economic data, plus the practical experience of its personnel, GFA officers estimate that a cargo load factor of 50 percent will be realized for the operation. Rates are based on a charge of 30 cents per ton-mile for distances up to 2,500 miles and decrease to 20 cents per ton-mile for cargo carried in excess of that distance. This rate has been based on tentative estimates of sales and cost, but the company believes the rate can be further reduced after the airline has been operating for a sufficient number of months to determine more accurately the actual cost and revenue.

"But," it is pointed out, "even the 20 and 30 cents per ton-mile rate is considerably lower—in some cases 100 percent and more—than existing air express rates."

Laneri believes that at such rates the shippers will "definitely take advantage of a trip calculated in hours, in preference to the ocean carrier service which requires time figured in days and weeks for the long journey between North and South American ports." The air cargo line will transport any object that will fit into an airplane.

Globe Freight calls itself "another guinea pig in the rapid fire series of experiments that have been and are going on in the fast-moving field of aviation." The company believes in its own future, in the future of aviation, and cargo carriage by air in particular. And it believes, too, that the day is not far off when "90 percent of the export-import trade will be, literally, 'carried on' by air."

Vice president in charge of operations is C. D. Swinson of Miami, who has a backlog of 26 years' aeronautical experience upon which to draw. His career started during the First World War and he's still going strong. He flew with PAA as senior pilot and later as chief pilot for the Eastern Division. Following this he became assistant operations manager in charge of the Eastern Division, Belem, and Buenos Aires. He resigned from this position to join American Export Airlines as operations manager. Of his 26 years in the aviation industry, 17 have been with major airlines in the operations departments.

XPBM-5A, World's Biggest Amphibian, Built by Martin

The largest amphibian airplane ever built, a huge 30-ton craft which its builders said should solve problems forced on the aerial branches of the armed services by climatic extremes has taken to the air for its first test flight at the Glenn L. Martin plant at Middle River, Maryland.

The ship, listed as XPBM-5A, is a modification of the Martin PBM *Mariners*, twin-engined, gull-winged flying boats which have proven to be one of the outstanding naval aircraft. The PBM *Mariner* has taken off in 18-foot seas with 40 men aboard—30 more than her normal complement. Now it becomes dual purpose; it will be able to fly from runways, using a modern tricycle landing gear with the forward wheel folding up into the hull, the main wheels making a 180-degree arc to rest in wells built into the hull sides, and land at sea. It returns to the runway.

3¢ Postal Air Mail and 5¢ Airborne Letters Are Aims of New House Bills

THERE is a need for a three-cent postal air mail as well as a reduction in the present rate on letters from eight cents to five cents an ounce. This is the opinion of Congressman Harold C. Hagen of Minnesota, who recently introduced Bills HR4734 and HR4735.

Congressman Hagen, in pressing for the reduction of the air mail letter rate to five cents, quoted Postmaster General Robert E. Hannagen as being on record favoring the cut and having promised to work for its adoption. The Post Office chief came out for the lower air mail rate on September 7, 1945, in an address before the Aviation Section of the New York Board of Trade.

With the eight-cent rate due to return to six cents six months after the termination of the war emergency period, the Congressman emphasized that the reduction to five cents would be a decrease of only one cent and that in his belief the rate of five cents an ounce would justify itself. Stressing that an air mail postal card was but another step in the direction of giving the public a lower rate on air mail, he said:

"The three-cent postal card, in inaugurating an average man's airmail, will tend to give the public additional benefits of air transportation—in fact it does not seem right to me, for so thoroughly an established service as is our air mail, not to provide the convenience of a postal card.

"Both of the air mail bills I have introduced would aid in increasing employment, for they would help keep air mail at somewhere near the tremendous volume which it attained during the war when all were writing to their sons and daughters and wives and husbands in the service, and they were answering via air mail. The amazing growth of air mail is clearly shown by the fact the air mail pound-miles performed grew from 22,294,962,738 in 1941 to 85,802,866,010 in 1944 and during this period the payments made by the Post Office dropped from .93 mills per pound-mile to .33 mills per pound-mile.

"It has always been the policy of Congress since 1851 to recognize the Post Office as a vital important public service with the policy of 'service first.' There has been the feeling that the Post Office Department should not make huge sums from its services, although the profits from some forms of mail are used to subsidize others that are transported at a loss. However, it has been the feeling that this should not be carried too far. In the fiscal year ending June, 1944, profit on domestic air mail after all costs had been charged against it was reported by the Cost Ascertainment Service as $29,530,917.

"With air mail pound-miles showing an increase of more than 45 percent for the fiscal year ending June, 1945, according to the Civil Aeronautics Board reports, there seems little doubt that a much greater profit will accrue to air mail when the final report appears for this fiscal year. If the six-cent rate be restored, the profit from air mail will still show a substantial profit; so in theory we should increase the payments to the air carriers, or reduce the rate to the people. Of the two alternatives there doesn't seem to be any question as to which is advisable, and the Postmaster General has pointed out that he believes that the rate of five cents within a short time would justify the cut."

Hoop Stars Fly from One Game to Another

The San Diego Dons, the nation's first all-flying basketball league, recently played a series of games on four successive days in four different states, meeting the Simplot-Deserets at Salt Lake City on December 18, the Ambrose Jellymakers in Denver on December 19, the M. & O. Smokies at Kansas City, December 20, and the Phillips Oilers at Bartlesville, Oklahoma, December 21—going from game to game, by air, of course!

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WORLD'S OLDEST AIRLINE

Air Freight in the News As TWA, Continental And United Go into High Gear

A NEW air freight tariff, extending cargo service to 33 cities on Transcontinental & Western Air's coast-to-coast route, is now in effect. Air freight service had been available in only five cities on the airline's route. At the same time, Continental Air Lines marked its entry into the air freight field, naming rates between all cities on the company's system; and United Air Lines announced plans for inauguration of air freight service over its coast-to-coast and Pacific Coast system, effective the beginning of next month.

TWA has entered into an interline arrangement with Continental which will permit through air freight service and rates between all cities on both systems. This represents the first time that any two carriers have issued joint air freight rates to and from points on each other's system.

R. E. Whitmer, cargo sales director of TWA, said that the extension of service provides air shipping facilities to shippers in more than 500 communities located within the terminal areas for pickup and delivery service. A revised rate structure was planned for the new tariff, new rates having been published as an airport-to-airport basis with separate charges for pickup and delivery. Under this new rate structure it is possible to fly a 100-pound transcontinental shipment in the lowest classification for $33.63 as compared with last month's air freight rate of $37.95—a reduction of 11 percent.

"Rates in our tariff," says Continental, "are on an airport-to-airport basis, and in certain cities pickup and delivery service are provided by local drayage firms with nominal additional charges. In many instances, users of air freight will effect their own pickup and/or delivery service."

Continental has published a "classification by exception"; thus, many items not specifically classified, take Class I rating. The line offers four classifications—I, II, III, and IV—ranging from 38½ cents per ton-mile to 26½ cents per ton-mile.

United's tariff, filed with the CAB, shows rates as low as 27 cents a pound on shipments of 3,000 pounds from coast to coast. Here are some typical examples of UAL's new tariffs: 25 pounds from New York to the Pacific Coast, $8.78; 100 pounds, $33.63; 25 pounds from Chicago to Los Angeles, $6.46; 100 pounds, $24.35. Tariff is based on a minimum of 25 pounds.

C. P. Graddick, the company's director of air cargo, stated that United's freight tariff is "the simplest yet filed with the Civil Aeronautics Board, inasmuch as we do not have various rates for various classifications." He called it "a definite break from the traditions of rail, truck, and earlier air freight tariffs." However, a separate tariff has been filed for the experimental movement of fruits and vegetables from West Coast areas to the East at a rate of 15 cents per ton-mile for transcontinental planeload shipments.

Through contract arrangements with motor carriers, pickup and delivery service will be provided—at the option of air freight shippers or receivers—in the metropolitan areas of key cities in the East, Midwest, and West. United's air freight tariff is also based on airport-to-airport service, with delivery charges additional. These will be based on actual trucking costs to the airline, which amount to 35 cents per 100 pounds for pickup or delivery.

New Year Brings More Air Express Rate Cuts

SIGNIFICANT reductions in air express rates have been ushered in by the New Year, coincident with announcements by Panagra Pan American World Airways, and the Air Express Division of the Railway Express Agency.

Panagra has lowered its air express rates an average of 10 percent to and from any point on its West Coast route from Balboa in the Panama Canal Zone to Buenos Aires, and has increased its weight limitations on single shipments from 250 to 500 pounds. A few examples of Panagra's reductions are: the Balboa to Lima cargo rate, cut from 79 cents to 71 cents per pound; Lima to Buenos Aires, from 94 cents to 86 cents; Miami to Lima, from $1.18 to $1.05; New Orleans to Buenos Aires, from $1.70 to $1.62; Los Angeles to LaPaz, from $1.95 to $1.54; Los Angeles to Buenos Aires, from $2.26 to $1.95; and Los Angeles to Lima, from $1.88 to $1.46.

PAA's *Clipper* air express rates from United States gateways to specific points in Latin America have been reduced an average 10 percent throughout the Central and South American area. Some significant changes are: Miami to Balboa, from 76 cents to 55 cents; Miami to Rio de Janeiro, from $1.50 to $1.41; Miami to Curacao, 73 cents to 59 cents; Los Angeles to Bogota, $1.76 to $1.38; New Orleans to Guatemala, 53 cents to 49 cents; Brownsville to Mexico City, 26 cents to 24 cents; and Miami to Cartegena, from $1.06 to 58 cents—the latter rate in accordance with PAA's inauguration of individual rates to 43 airports in Colombia, which replaces the single rate formerly charged for air shipments to "any destination in Colombia." A single rate will still be available by *Clipper* express to destinations other than the 43 airports affected by the new rate schedule.

Reductions by the Air Express amount to more than 40 percent on fresh fish, fruits, mushrooms, and vegetables air expressed from Colorado Springs, Denver or Pueblo, to Fort Smith, Arkansas; Memphis; or Tulsa. The agency also announced an extension of a similar rate reduction from these three cities to 14 cities in Texas and to Oklahoma City, which went into effect last August, and added 10 off-airline points to the lowered scale. An example of the new rates is the cut in charges on a Colorado Springs-to-Memphis 15-pound air shipment from $5.93 to $2.85. These commodity rates are established in addition to reductions of some 13 percent on all air express.

Luria Engineering Offers Full Service to Aviation

LURIA ENGINEERING CORPORATION, whose personnel developed and furnished many types of standard hangars used during the war, including those for the famous *Superfortress*, has expanded its New York office and moved to new quarters at 500 Fifth Avenue. The corporation has a division office in Chicago.

According to an announcement by Herbert B. Luria, president, the organization is offering to aviation a complete service, "engineering-wise and construction-wise, including preliminary service with recommendations, overall plan, design and construction of a complete airport ready for operation." He stated that they were also prepared to make improvements and additions to existing airports where present facilities are inadequate. Standard units of hangars and other buildings are designed and built to permit ready adaptation to individual requirements with the further advantage of low production cost.

Associated with Luria are B. H. Tripp, executive vice president; P. A. Strobel, vice president and director of enginering; R. L. Hedlander, sales manager; and Major Victor T. Nydele, Midwest division manager.

Oysters in the Air

What is believed to be the largest oyster shipment ever handled by the Air Express Division of Railway Express Agency passed through its LaGuardia Field office in New York recently when 4,500 pounds of the seafood, crated in over 500 tins each weighing 80 pounds, were flown to Chicago in a charted "reefer" plane.

AIR EXPRESS TO THE RESCUE—The original idea was to distribute 1,200 dolls as favors at a party for underprivileged girls of the City of Memphis. But somebody slipped up somewhere, and as a result the dolls arrived minus hair. Even as favors bald dolls are not acceptable. This was where the Air Express Division of Railway Express Division stepped in. Result: the necessary wigs arrived in Memphis on time for dressing and presentation at the party shown above.

100 C-V MODEL 240s PURCHASED BY AMERICAN

REVOLUTIONARY FEATURE—Artist's sketch showing how the Consolidated Vultee Model 240 transport, 100 of which have been purchased by American Airlines System, will load passengers. It is the first commercial plane to utilize exhaust jet propulsion.

JET exhaust propulsion will be used in commercial passenger airplanes for the first time in history as a result of the purchase of 100 new-type airplanes announced two days after Christmas by American Airlines System. Used as an auxiliary to conventional propeller drive, jet propulsion derives thrust from formerly wasted exhaust gas heat, and will increase the airplane's speed approximately 20 miles per hour.

Announcing a contract with Consolidated Vultee, C. R. Smith, chairman of the AA board, said that the 100 planes would cost approximately $18,000,000. The new twin-engine, 40-passenger Model 340 aircraft will be used as supplements to larger four-eingine equipment. The 240 is reported to have been designed to achieve the fastest and most economical service for flights of less than 1000 miles in the United States, Mexico and Canada. In addition to exhaust jet propulsion the low-wing monoplane incorporates other revolutionary features including:

1. Cruising speed of approximately 300 miles per hour with a maximum speed in excess of 350 miles per hour, which compares with the 180 miles-per-hour cruising speed of the standard DC-3, the most widely used passenger plane in service today.

2. The main loading door at the front rather than the conventional rear location. The door which is hinged at the bottom and opens outward contains built-in steps which obviate the need of airport ramps.

3. Reversible pitch propellers. These with the front loading arrangement enable the pilot to bring the plane under airport canopies in inclement weather and to back the plane away to operating position under the plane's own power. In addition the reversible pitch propellers act as an auxiliary braking force when landing.

4. Power plant installation especially designed to eliminate exhaust noises and airplane vibration.

5. Dual-tricycle landing gear equipped with a steerable nose wheel.

6. Windows larger than any plane in operation, and coordinated with the wing arrangement to provide fullest visibility.

7. A cockpit engineered in consultation with and for the airline pilot to bring about increased efficiency and operation.

8. Arrangement providing easiest possible cargo loading and luggage "handled by the passenger" if so desired.

The plane will have an approximate gross weight of 34,000 pounds and will carry a payload of 8500 pounds for more than 500 miles. This represents approximately 1000 pounds in addition to 40 passengers and their luggage.

Age No Handicap To Air-Minded Woman

Consider the case of Miss Kathleen McDonnell who went for her first airplane ride at the ripe old age of 81.

The air-minded octogenarian, who was born in Ireland and had a terrific longing to visit the Ould Sod, boarded an American Airlines transport in Chicago and went scooting through the skies to her native land. This was her first return to Ireland since the day of Queen Victoria's funeral.

How did she like her air trip?

"Ships are too slow," she said. "They're beginning to be outmoded."

Philippine Air Lines

(Continued from page 34)

gao, Del Monte and Davao, and from Manila to Zamboanga, via Dumaguete and Dipolog, with a connecting service between Zamboanga and Davao, were approved but the outbreak of war prevented their being flown. Application for further service over a proposed route from Baguio along the northern coast line to Aparri has been held in abeyance pending procurement of equipment and personnel.

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AIRDOM

By Richard Malkin

(Trade Mark)

SCANNING 1945

THERE is no difficulty in selecting the biggest news of 1945. V-E Day and V-J Day take popular precedence from the short range of only a few months, but history probably will agree that the atomic bomb made the year 1945 one of the outstanding dates since the beginning of civilization.

The termination of armed hostilities resulted in the general acceptance of the idea — once far-fetched, but now crystal-clear—that national boundaries mean nothing unless there is a will for peace and a desire to cooperate in order to maintain that peace. On the other hand, the sudden emergence of the Atomic Age, so closely linked with the Air Age, has given birth to the unequivocal fact that together the world will live to prosper, or be doomed to the Götterdämmerung of a global Hiroshima.

The development of civil aviation is important because its very nature ties in directly with the new social, economic, and political values of a postwar world which will be guided by a United Nations Organization. With a full year ahead of us, the civil aviation achievements of the past 12 months come into full focus.

In January, 1945, the Boeing C-97, military sister of the commercial *Stratocruiser*, set a new record by streaking from Seattle to Washington, D. C., in six hours, three minutes and 50 seconds.

A month later, Consolidated Vultee uncovered its plans for the Model 37, a six-engined long-distance transport capable of accommodating 204 passengers. With its overall size equal to the height of a 21-story building and a wingspan more than twice that of the famous *Liberator*, the Model 37 will be powered by a half-dozen pusher-type propellers each two stories high.

Then along came Howard Hughes with the H-4 which meant to out-giant the rest of the air giants. This baby, when completed, will have a gross weight of 400,000 pounds and a wingspread of 320 feet. (A regulation football field is 300 feet long.) It will have eight engines, each with 17-foot, four-bladed propellers. Speed? Well, according to Hughes Aircraft, the H-4 will have a high speed of 218 miles an hour, a cruising speed of 175, and a landing speed of 78. Cargo? Sixty tons! Passengers? The equivalent of 60 tons!

Glenn L. Martin introduced his *Hawaii Mars*, 72½-ton flying boat built for the Naval Air Transport Service. Capable of transporting 135 passengers, the big seaplane also had a number of interesting cargo features.

Later in the year Martin came along with his Models 202 and 228. The 202 is a twin-engine, low-wing passenger-cargo craft with cruising speeds of 270 miles per hour and maximum speeds of 306 miles per hour. It was designed for low-cost air travel over distances of from 250 to 700 miles. Carrying capacity is 30 passengers. The 228, based on the design of the 202, is slightly smaller and weighs 5,000 pounds less. With low fuel consumption on one hand, and relatively high speed and payload capacity on the other, further rate reductions may be in the offing.

Consolidated Vultee's Model 110 is another 30-passenger airliner soon to be seen on the airways. This will have a cruising speed of 275 miles an hour, a gross weight of 32,300 pounds, and a passenger-cargo payload of four tons.

Along about the Fall, the Republic *Rainbow* bowed in. In the high-speed, long-range class, the luxury liner will accommodate 40 passengers and a crew of seven, plus 1,600 pounds of baggage and 1,700 pounds of freight. Pressure-proof, noiseproof, cabins, a lounge, bar, plane-to-shore telephones, motion pictures, fluorescent lighting—all are included in the *Rainbow*.

Douglas had its day, too. The aviation industry had been hearing about the *Skybus* for a long while, and the news was suddenly broken at a New York press conference sponsored by the aircraft company, the Propeller Division of Curtiss-Wright, and the Allison Division of General Motors. A revolutionary plane, the *Skybus* has motorless wings and is actuated by twin counter-rotating propellers astern of the fuselage. But most important: the ship is designed for economy. (The military version, XB-42, set a new West-East speed record: five hours, 17 minutes, and 34 seconds.)

Over in England, Blackburn Aircraft came through with its six-engined *Flying Boat* which was reported capable of carrying 160 passengers plus 30,960 pounds of cargo. The Miles M-60 was introduced as a 14-passenger feeder-liner, while the de Havilland *Dove* claimed an 11-passenger capacity.

AIR TRANSPORTATION called the Short Brothers-Saunders Roe *Shetland* "a flying boat with plenty of oomph." This is a double-decker built to accommodate 70 passengers in addition to an 11-man crew. Four engines generate a speed of 267 miles an hour.

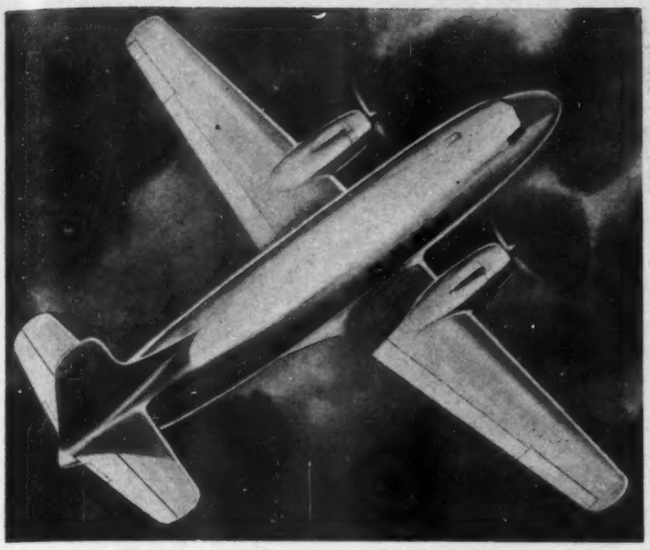
Last Spring the question of the chosen instrument versus regulated competition came to a head. Anxious to sound out Congress on the subject, AIR TRANSPORTATION conducted a poll of the members of both Houses. Three questions were asked:

Were they in favor of the selection of a single company for over-ocean air transportation as the chosen instrument of the Government?

Would they show partiality to the formation of such a single company if its stock were divided among all the airlines?

Or did they feel that regulated com-

GARGANTUA OF THE SKIES TAKES SHAPE — Hull of the Hughes H-4, stretching away to a length of 220 feet. Cut-away section in the center of the hull will accommodate the wings, which, in terms of footage, will be longer than a regulation football field. The H-4 is built almost entirely of wood, with birch as the principal material.



MARTIN 202—Glenn L. Martin's new twin-engine transport, designed for low-cost travel over ranges of from 250 to 700 miles.

petition in international aviation was the best bet for all concerned?

The results showed 90 percent in favor of regulated competition.

Penicillin took to the air for the first time, and it wasn't long before this practice became a common one. The wonder drug is now a regular passenger on numerous cargo lines.

America was very much jet-conscious: and right about the time that jet planes like the *Airacomet* and the *Shooting Star* were topics of considerable discussion, Hall L. Hibbard, vice president and chief engineer of the Lockheed Aircraft Corporation, popped into the limelight with the prediction that speeds of 100,000 miles an hour are possible.

Meanwhile, over in New Jersey, the Switlik Parachute Company proved that it is commercially possible to deliver cargo by air to even the smallest hamlet through the use of special cargo parachutes. The Manhattan Storage and Warehouse Company, which showed how correct packaging goes hand-in-hand with cargo-'chuting, cooperated in these tests.

To prove that air freight will have something to say about future deliveries of wearing apparel, American Airlines knocked months off the regular delivery time (via rail) of rayon fabric for ladies' dresses. After air shipment from the Georgia mill to the New York print house, then across the country to Los Angeles for styling, and back to New York for sale, the fashions caused a big splash with store customers.

Stewardess service celebrated its 15th anniversary, and Bell Aircraft its tenth. However, on other fronts there were reports of proposed mergers: Beech and Cessna; American Airlines and Mid-Continent; Pennsylvania-Central and Northeast; National and Caribbean-Atlantic. American Export joined American to form American Airlines System, with the former now known as American Overseas Airlines.

Transatlantic routes were awarded to Pan American, American, and TWA, with the former two inaugurating landplane flights to Britain before the year was out.

Air travel and air express rates continued their downward trend. Passengers began flying between certain major cities at rates lower than those for first class railroad travel. Shippers were given the benefits of a 13 percent air express rate cut.

The Council of the Provisional International Civil Aviation Organization convened in Montreal and Dr. Edward P. Warner was elected president. He resigned as vice chairman of the CAB.

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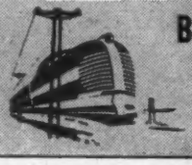

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Postmaster General Robert E. Hannegan traveled to New York to address the Aviation Section of the New York Board of Trade. High spot of his talk was his proposal to drop the air mail rate to the five-cent level.

John F. Budd, publisher of AIR TRANSPORTATION and chairman of the above aviation body, came into the news several times during the year. His proposal for an air-rail-bus terminal in Brooklyn was received so favorably that *The Brooklyn Eagle* has taken upon itself the job of pushing the project. Budd's subsequent Westair Helicopter Terminal plan for the riverfront section of midtown Manhattan won the endorsement of most of the leading rotary wing experts of the country.

Probably more important was Budd's success in bringing into the open the problem of recognition of the freight forwarder by the airlines. TACA took the initiative by granting 7½ percent brokerage on all international air cargo shipments.

During the year 1945, the 24 domestic and international airlines of the United States shattered all previous records. According to a review prepared by the Air Transport Association of America, all categories of traffic registered unprecedented gains over 1944, ranging from 57 percent in revenue passenger-miles to approximately 39 percent in ton-miles of express and freight.

It should be noted that these new high-water marks were effected during a period while the commercial carriers still were partially engaged in contract war operations, and that the redeployment of troops across the country made its own strong contributions.

DOUGLAS SKYBUS—Artist's version of the DC-8, a radical departure in airplane design.

At the pre-Pearl Harbor peak, domestic airlines operated a total of 359 planes. On December 15, 1945, the total had risen to 402. Add to this the five-score planes in overseas service and the many more scheduled for delivery before the new year rolled around, the total is somewhere in the neighborhood of 600.

But the pressure for seats was so great—and that pressure continues unabated right into 1946—that the record total of planes was not sufficient to meet passengers' needs. (Before the current year is out, United States airlines will be operating at least 1,400 planes.)

"The network of air routes for the transportation of passengers, air mail, and cargo in the United States," the ATAA reported, "was increased by 4,034 miles. The total number of route miles which the airlines were authorized to fly by the CAB reached the all-time high of 66,971.

"The average number of seats rose to 19.2 and the airline personnel to more than 50,000. . . . As compared with seven to nine hours before Pearl Harbor, planes in service during the later months of the war were flown 11 or 12 hours daily."

Here are some figures to digest:

Revenue passenger-miles totaled 3,525,619,866 as compared with 2,246,894,489—an increase of 56.9 percent.

Revenue miles jumped from 144,240,440 in 1944 to 219,169,459 in 1945—a rise of 51.9 percent.

Revenue passengers rose from the 1944 total of 4,575,716 to 6,621,842—more than 44.7 percent.

Tons of mail were 72,231,126 as compared with 51,143,837 in 1944—a gain of 41.2 percent.

Ton-miles of express and cargo reached 24,505,243 last year as compared with 17,694,988 the year before—higher by 38.4 percent.

COMPARATIVE U. S. AIR TRANSPORT OPERATIONS

(10 months ended Oct. 31, 1945-1944)

(000's omitted)

	Total Oper. Rev.		Net After Taxes		Rev. Plane Miles		Rev. Pass. Miles		P.C. Load Fac.	
	1945	1944	1945	1944	1945	1944	1945	1944	1945	1944
American	$39,605	$31,895	$4,390	$4,462	39,198	27,937	651,198	466,669	90.3	90.4
Braniff	6,648	4,570	663	928	6,624	4,288	118,639	75,982	89.6	90.9
Colonial	1,481	939	102	50	1,423	842	24,178	14,410	81.1	82.1
Chi. & South.	3,982	2,370	262	141	4,280	2,271	70,535	39,704	79.4	84.7
Continental	2,607	1,640	407	246	3,125	1,922	41,420	19,285	79.4	88.2
Delta	5,095	3,251	616	481	4,824	2,779	85,208	52,775	84.9	91.4
Eastern	21,519	14,682	2,157	2,628	22,193	13,779	378,225	211,893	87.5	86.5
Inland	1,352	658	50	28	1,448	978	15,458	5,622	72.5	71.9
Mid-Continent	2,569	1,671	155	182	2,654	1,855	34,558	17,757	75.2	77.3
National	3,287	1,739	174	32*	4,974	2,622	60,167	31,499	89.9	87.4
Northwest	10,105	6,442	857	658	10,040	5,912	178,026	97,614	89.0	85.9
Northeast	1,872	910	188*	36	1,825	822	30,940	10,591	74.4	61.6
Penn-Central	9,269	5,056	820	427	9,165	4,204	155,957	73,203	82.5	83.6
TWA	28,536	20,858	1,811	2,390	26,366	17,723	428,783	288,610	90.7	92.2
United	32,978	29,310	4,545	5,978	32,682	24,088	494,661	377,191	95.2	96.3
Western	4,804	2,827	325	148	4,437	2,458	79,847	44,899	88.0	89.0
Total	$175,709	$128,818	$17,146	$18,695	175,258	114,480	2,847,800	1,827,704	88.9	90.1

* Deficit.

HAWAII MARS—Another Martin craft, 72½-ton flying boat, built for the NATS. It can accommodate 135 passengers.

AIR TRANSPORTATION CONGRATULATES

C. E. Woolman

ol. Robert M. Love

Lowell M. Yerex

. James H. Doolittle

ilton H. Anderson

. Julius C. Holmes

EXECUTIVE

COLLETT EVERMAN WOOLMAN, pioneer in Southern aviation, elected to the presidency of Delta Air Lines. He previously held the position of vice president and general manager. Woolman organized Delta Air Service in 1929, which was reorganized under its present name in 1935.

COLONEL ROBERT M. LOVE, new president of All American Aviation. Prior to the war, he headed Inter-City Aviation, which operated out of Boston. He was a member of the Massachusetts State Aeronautical Commission in 1941.

LOWELL M. YEREX, founder, president, and general manager of TACA for 14 years, who has retired from active office. He will remain as a director. Yerex organized TACA in 1931 in Honduras as a one-man, one-plane company. Since that time the company has expanded into the largest Latin American airline system.

LIEUTENANT GENERAL JAMES H. DOOLITTLE, former commander of the Eighth Air Force and one of the outstanding heroes of the war, back again with the Shell Union Oil Company as vice president. He will make his headquarters in New York.

MILTON H. ANDERSON, one of Northeast Airlines' first employes, who has been elevated to the important posts of vice president and general manager. He has served the airline as chief pilot, operations manager, and vice president in charge of operations.

BRIGADIER GENERAL JULIUS C. HOLMES, who figured prominently in the war's most important diplomatic missions as a member of General Dwight D. Eisenhower's staff, appointed a vice president of Transcontinental & Western Air, attached to its International Division.

J. STANTON ROBBINS, named vice president in charge of traffic of American Overseas Airlines. Well known as an expert in international travel, he was responsible for the organization of Europe on Wheels, Inc., the Drive-Yourself system in Europe. He has also served with Nelson Rockefeller as special assistant.

GEORGE F. DOHERTY, JR., elected a vice president of the American Express Company, with responsibility for the enlarged foreign traffic department. During the war he served as division chief in charge of the forwarding divisions of the BEW, OEW, and FEA.

CAPTAIN THOMAS J. MAY, who served during the war in the Air Technical Service Command, appointed general manager of Robinson Airlines. Before the war he was employed in the Engineering and Developing Division of Consolidated Vultee.

ALBERT C. SCHOLLER, appointed general manager of Gilbert Air Freight. He has been connected with American Airlines in their cargo department and with the United Van Line.

MAJOR JOHN L. MORRIS, executive secretary of the Wilmington, N. C., Chamber of Commerce, who has joined National Airlines to become special assistant to the president. He is a former news editor of *The Tampa Tribune* and *The Macon Telegram.*

LIEUTENANT COLONEL JAMES N. RAUEN, named assistant to United Air Lines' vice president-administration. He joined UAL in 1934 and was manager of reservations service when he went on military leave in 1942.

LIEUTENANT COLONEL CHARLES A. SANFORD, appointed chief of the new Aviation Department of the Insurance Company of North America Companies. He has been associated with aviation insurance since the early days of commercial flying.

MAJOR GERALD M. SMITH, named by TACA as executive assistant. A Harvard graduate, he served during the war on the "Hump" operation and the trans-India run.

HARRY M. McKAY, SHERMAN M. FAIRCHILD, and LOUIS FAHNESTOCK, 3rd, respectively appointed head, research director, and engineering chief of the Fairchild Engine and Airplane Corporation's new Personal Plane Division.

CAPTAIN JOHN W. WHITE, USNR, new manager of Pan American World Airways' Alaska Region. A Yale graduate, he has been a Pan Am employe for nine years. He previously worked in the airline's traffic department in New York, Washington, D. C., and Seattle.

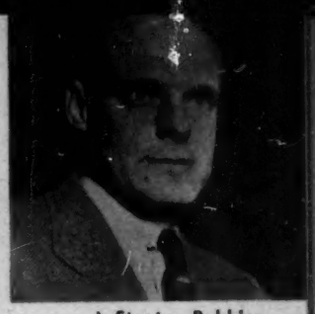
ADVERTISING AND PUBLIC RELATIONS

ROBERT E. JOHNSON, who is back again with United as director of advertising and publicity. He was an air combat intelligence officer with the Navy for more than two years. Johnson has been with UAL and its predecessor companies since 1929.

EUGENE PATTERSON WARNER, appointed publicity director for the International Division of TWA. He came to the airline with nearly 20 years' journalistic experience. Warner served in Italy in a civilian capacity for OSS.

BUELL PATTERSON and MARSHALL BUNNELL, American Airlines' new assistant director of public relations and Eastern Division public relations director, in the order named. Patterson was formerly publicity director for Curtiss-Wright at Buffalo; Bunnell was associated with several Eastern newspapers and the Associated Press.

LIEUTENANT COLONEL JOHN T. CARLTON, former Atlanta newspaperman, who has been named manager of the newly-created PCA News Bureau. Serving 37 months in the Asiatic-Pacific theatre, he was on the staff of General Joseph Stilwell.



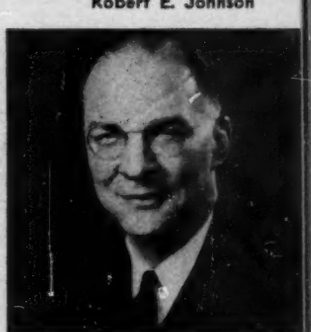
J. Stanton Robbins

George F. Doherty, Jr.

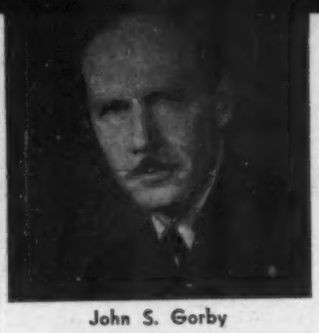
Capt. Thomas J. May

Col. Charles A. Sanford

Robert E. Johnson



Buell Patterson

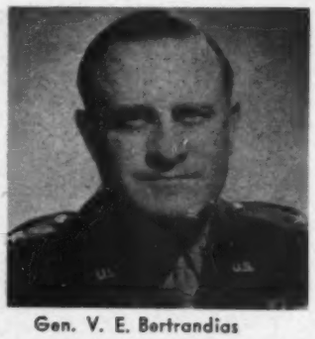


John S. Gorby

Walter Brown, Jr.

Robert L. Turner

Edward S. Sullivan



Gen. V. E. Bertrandias

C. H. Weaver

COMMANDER WALTER H. NEFF, returned to PAA after four years in the Navy, and now holding the job of public relations manager of the Atlantic Division. He is former aviation editor of *The Wall Street Journal.*

JOHN S. GORBY, formerly naval air traffic coordinator in the Pacific area, who has resumed his work with the Railway Express Agency. He has been named superintendent of public relations.

COLONEL RICHARD H. HOBBS, appointed vice president and manager of the Chicago office of Irwin Vladimir and Company. He held a number of important Army posts during the war.

PETER J. McDONNELL, regional director of public relations for AA, who has resigned to become associate director of public relations Abbott Kimball Company, Inc. He returns to the advertising field which he left in 1938.

R. HUMBERTO URRUTIA, new publicity assistant for TACA. He will have charge of agency publicity for Latin American countries. A former news correspondent in New York for Latin American newspapers, he served with the United States Army.

TRAFFIC

WALTER BROWN, JR., popular New York shipping executive for the past two decades, now on the TWA International Division staff as director of passenger traffic. He has been with American President Lines since 1926.

LIEUTENANT COLONEL ROBERT L. TURNER, recently released from the Air Transport Command, back again with Eastern Air Lines and now holding the position of Northern division manager. He handled the traffic side of the history-making Cairo and Yalta Conferences.

J. D. FESSIO, named traffic manager for PAA's Alaska Region. He is a former lieutenant commander in the United States Navy, and was one of the two men who made the first flight into Hidden Valley, New Guinea (Shangri-La).

MAJOR ALLEN ALDRIDGE, MAJOR DOUGLASS WOOD, and J. M. SHELBY, appointed district traffic managers in the respective cities of Memphis, Dallas, and Fort Worth. Aldridge has a 13-year background in aviation. Wood and Shelby returned to their former posts after service with the ATC.

C. J. MIDDLETON, returned to United Air Lines as district traffic manager at Seattle. He spent three years in the ATC.

LIEUTENANT COMMANDER CHASE WASON, USNR, former Minneapolis district traffic manager for Mid-Continent Airlines, now holding a similar job in Kansas City. He began his aviation career in 1929.

KENNETH S. WARD, back with Delta as Atlanta traffic manager after 42 months' service with the ATC.

MAJOR D. W. HUTCHINS, working again in his old post as district traffic manager for Northwest Airlines at Portland, Oregon. He joined NWA 10 years ago.

V. K. STEPHENS, new Washington regional manager for Pennsylvania-Central Airlines. A former law student, he came to PCA in 1937.

GLIDDEN FORBES, assigned by American Overseas as passenger traffic officer in the company's London office. He was for 11 years with the North German Lloyd Steamship Line.

ROBERT J. FLIPSE, named traffic representative of TACA in New York. He started his career 10 years ago with PAA.

CARGO

MAJOR J. C. O'CONNOR, returned to Philadelphia as area air cargo manager for United after serving since 1942 in the ATC.

PASSENGER

EDWARD S. SULLIVAN, associated with PCA for more than a decade, now with TWA as manager of the Agency and Interline Department. In his new position he will work closely with travel agents appointed to handle airline tickets.

CAPTAIN GEORGE G. CAIN, back to his desk as Western Air Lines' district manager of passenger service for the Los Angeles area. He left the ATC several months ago.

JOHN J. FARMER, named manager of passenger service for UAL at Chicago. He was recently discharged from the AAF after serving in the Pacific theatre.

SALES

MAJOR GENERAL VICTOR E. BERTRANDIAS, former vice president of Douglas Aircraft and World War I flyer who re-entered military service in July, 1942, returned from the Pacific war and back on the job at Douglas in charge of export sales. He came to Douglas 14 years ago.

C. H. WEAVER, newly-appointed head of the Marine & Aviation Sales Department of the Westinghouse Electric Corporation. The activities of the Aviation Section were recently transferred from the Industrial Sales Department.

CAPTAIN PRESCOTT A. TOLMAN, named director of sales for Eastern Air Lines. Prior to enlisting in the Marine Corps, Tolman spent seven years with EAL.

W. R. BEATTIE, former free lance writer and prewar traffic executive for Braniff Airways, now manager of the airline's Interline, Agency & Foreign Sales Department. He recently returned after three years with the Navy.

LIEUTENANT COMMANDER JOHN A. BEATON, returned to American Airlines after several years' service with the United States Navy. He holds the position of New York passenger sales supervisor.

C. P. GILLIGAN, JR., appointed to the sales managership of Gilbert Air Freight. His past experience includes important posts with American, Colonial, and Otto Aviation.

CHARLES J. DE BEVER, who has resigned as parachute specialist of the CAA to become sales supervisor of General Textile Mills, makers of the non-oscillating "baseball" parachute.

(Reg. U. S. Pat. Off.)

AIR EXPRESS, REA

Air express, handled at greater New York by the Air Express Division of Railway Express Agency, marked up a 21 percent gain in volume of shipments for November, 1945, over the same month last year. The total of shipments for November was 74,565, compared with 61,763 for the same period last year. Gross revenue on this business amounted to $346,583, a gain of 10.6 percent over November, 1944.

International air express also scored striking gains for November. Shipments handled for the month totaled 29,108 compared with 23,831 for the same period last year, marking a 22.1 percent increase. Gross revenue for the month amounted to $126,181 as against $90,937 for November, 1944. This constituted a 38.7 percent rise. These business totals do not include the air traffic to and from Canada.

BRANIFF

More than 388,000 revenue passengers were carried by Braniff Airways for a total of 150 million miles during 1945 as shown in preliminary figures released today by the airline.

The revenue passenger miles represented a jump of 57.7 percent increase over the 1944 figure while the number of passengers carried increased 58 percent over the preceding year. Revenue miles flown over the entire system totaled more than 8,250,000 in 1945, as compared to 5,406,083 in 1944, an increase of 54 percent. Air mail increased to 5,311,312 pounds for the first 11 months, while express pounds totaled 1,208,169, more than 60 percent above the 1944 figure for the same period.

DELTA

Every phase of traffic over Delta Air Lines, including passenger, cargo and mail, showed large gains during 1945 over 1944.

During 1945 Delta carried 277,986 passengers, a 69.2 percent increase over the 164,287 passengers carried during 1944. Revenue passenger miles flown in 1945 totaled 104,587,909, or 59.1 percent more than the total of 65,745,996 for the year 1944. Express transported jumped 41.8 percent and totaled 1,326,041 pounds during 1945, compared with 935,340 pounds in 1944. Air mail rose 29 percent, from 4,706,849 pounds in 1944 to 6,070,383 pounds, during the past 12 months.

In December, 1945, revenue passenger miles increased to 10,064,377 from 6,069,445 recorded in December of 1944, an increase of 65.8 percent.

EASTERN

Eastern Air Lines carried 88,163 revenue passengers a total of 44,871,000 revenue passenger miles during November, 1945, for an increase of 55 percent over 1944's corresponding month. In November, 1944, 56,733 passengers flew a total of 30,125,323 passenger revenue miles. More than 2,504,000 revenue miles were flown by Eastern during November, an increase of 41 percent over the figure for November of the previous year. Passenger revenue for November, 1945, showed an increase of 27 percent.

MID-CONTINENT

MCA reported that the number of revenue passengers carried last November was 17,491, an increase of 16 percent as compared to the same month in 1944. Operating revenue was $348,347, an increase of 98 percent over the previous November. These results were realized even though the rate of air mail pay in November, 1945, was 22.24 cents per mile flown as against 39.33 cents in November, 1944.

TWA

TWA operated 50,453,625 revenue passenger miles last October, an increase of 36.8 percent over the same month of 1944. Revenue miles operated were 3,050,210 as against 2,148,039 for October, 1944, an increase in revenue miles of 42.5 percent. Air mail showed an even greater increase of 47.2 percent, with 3,781,531 pounds carried during October, 1945 as against 2,569,439 a year before. Air express shipments for the month were 740,297 pounds.

Revenue passenger-miles operated during November totaled 45,216,638. This represented a 44 percent increase over the corresponding month last year, when 31,396,283 revenue passenger-miles were flown. The airline also carried 3,631,382 pounds of mail and 639,820 pounds of express during November.

WESTERN

For the first nine months of 1945, Western Air Lines' operations in nine Western states and Canada earned a record-breaking net profit of $373,739.05, or 91 cents a share. The nine-months earnings compare with $111,553.38, or 27 cents a share, earned in the first three-quarters of 1944. Total revenues for the nine months were $5,278,241.97. This figure represents an 88 percent increase over earnings in the first three quarters of 1944, at $2,808,619.92.

The number of passengers and the amount of express carried by Western continued to surge upward, during October, topping all previous records in the history of the airline. Revenue passenger miles increased 74.66 percent for October over the same month of 1944. Express pounds carried increased 5.01 percent over the corresponding month of a year ago.

Dreamboat Sets Mark

A new official transcontinental flight record was established on December 11, when the Boeing B-29 Superfortress *Dreamboat* flew from Burbank, California to Floyd Bennett Field in five hours and 27 minutes, at an average speed of 450 miles per hour.

The Vets Place A Stake in the Sky

(Continued from Page 36)

in the United States the need for air transportation as a quick, efficient, and economical means of transport. Units are now being established in all sections of the country. These will be coordinated for dispersed shipments.

"The new units are also operated by veterans, and always will as long as veterans are interested. We feel that one of our big jobs is to combine the skill and techniques of all service men, and to give them something to work for."

VAE is not turning a cold shoulder to the foreign market. Studies of the Latin American and other overseas markets are in progress at the present time, and the results will be applied when the line is prepared to branch out.

The vets know that this will mean bigger aircraft, huge gliders, and more extensive facilities. But, to quote one of them:

"Air commerce is coming in like a violent storm—only it will not pass on, but stay!"

Colonial Eyes Quebec

Colonial Airlines has applied to the Civil Aeronautics Board in Washington for permission to engage in regular air transportation between New York City and Quebec, Canada. Air service between Quebec and Albany, Schenectady, Glens Falls, Plattsburg, New York; Hartford, Connecticut; Springfield, Massachusetts; and Burlington and Rutland, Vermont, is also proposed in the same application.

NAL Files New Schedules

National Airlines has filed revised schedules which will make possible, daily round trip service between Daytona Beach and Miami, Tampa, Jacksonville, New Orleans, Charleston, New York, and other intermediate points along the NAL routes. Navy approval of the airline's operations has made the Daytona Beach Navy Airport available to the airline.

Airborne Tomatoes

A short time ago only consumer-size packages of airborne tomatoes shipped on an experimental basis enjoyed higher ceilings. Now the Office of Price Administration has extended these ceilings to air-shipped tomatoes in wholesale-size packages. OPA stipulated that each tomato shipped in the larger packages must be wrapped in a transparent, non-reusable wrapper marked to show it was shipped by air so that such tomatoes can readily be told from those shipped by rail which have slightly lower prices.

AIR SHIPPING ★ ★ ★

[REG. U. S. PAT. OFF.]

International Express and Mail Tables

Air express rates quoted are from U. S. International airport of departure (U. S. Gateway) and are based on th prevailing tariffs, airport to airport (**see note**); also see note for Airfreight rates. Shippers are warned, however, that these are subject to change.

GATEWAY SYMBOLS

Bb—Bangor, Me.
Bro—Brownsville, Tex.
Bw—Boston, Mass.
Cg—Chicago
Cub—Cut Bank, Mont.
Di—Dallas
Eo—El Paso
Fv—Fort Worth
Gf—Grand Forks, N. D.
Jg—Burlington, Vt.
Lgs—Los Angeles
Lo—Laredo
Mia—Miami
No—New Orleans
Nyk—New York
Ph—Philadelphia
Sa—San Antonio
Sf—San Francisco
Sq—San Diego
Ste—Seattle

International Air Express is subject to two charges: one a charge per pound weight or measurements at carrier's option (200 cu. in. to the pound of weight), the other a charge per $100 of valuation. The two must be added on any shipment to determine the cost. Neither includes insurance, which may be purchased by the shipper from the carrier or otherwise.

Priorities: The air carriers warn all shippers that express traffic, both U. S. Government and commercial, is so heavy that no guarantee can be given that any shipment will depart on any particular plane unless it enjoys U. S. priority. Otherwise it will depart, in relation to other shipments, in the order received at the international airport used, subject to wartime limitations. Pickup service without extra charge is available for all international air express, except shipments routed through American Overseas Airlines. For shipments forwarded via Pan American Airways, a "Shipper's Letter of Instructions" is prepared and accompanies shipment to local REA office, where the PAA Airwaybill is prepared. (On cargoes to be shipped via American Overseas Airlines, Inc., shippers should contact "Shipper's Service," Room 922, 25 Broadway, New York 4, N. Y. HAnover 2-9144.)

International air carriers whose schedules and rates are included here are indicated by the letter following the symbol for the airport.

AIRLINE SYMBOLS

A—American Airlines
AO—American Overseas Airlines
B—Braniff Airways
C—Colonial Air Lines
EA—Expreso Aereo Inter-Americano
K—KLM-Royal Dutch Air Lines
NE—Northeast Airlines
NW—Northwest Airlines
P—Pan American Airways System and affilintes
T—Trans-Canada Air Lines
U—United Air Lines
W—Western Air Lines

Destination	U. S. Gateway & Airline	RATES (See Note) Per Lb.	RATES (See Note) Per $100 Value	Depart	Mail per ½ Oz.
Cayenne, Fr. Guiana	Mia P	1.02	.32	Dly	.15
"	No P	1.26	.43	Dly	.15
"	Bro P	1.26	.43	Dly	.15
"	Lgs P	1.91	.43	Dly	.15
Cayo Mambi, Cuba	Mia P	.26	.17	Dly	.08
Chetumal, Mexico	Mia P	.55	.32	M,W,Sa	.08
"	No P	.55	.32	M,W,Sa	.08
"	Bro P	.55	.32	Su,T,Th	.08
"	Lgs P	1.04	.32	M,W,Sa	.08
Chiclayo, Peru	Mia P	1.11	.43	Dly	.15
"	No P	1.19	.43	Dly	.15
"	Bro P	1.19	.43	Dly	.15
"	Lgs P	1.81	.43	Dly	.15
Cienfuegos, Cuba	Mia P	.20	.15	Dly	.08
C. del Carmen, Mexico	Mia P	.45	.17	Dly	.08
"	No P	.45	.17	Dly	.08
"	Bro P	.47	.32	Dly	.08
"	Lgs P	.94	.32	Dly	.08
CiudadTrujillo, D. R.	Mia P	.45	.17	Thrice Dly	.10
"	Mia K	.98	.50	Su	.10
Ciudad Victoria, Tamps.	Dl B	.30	.17	Dly	.08
"	Fv B	.30	.17	Dly	.08
"	Lo B	.16	.16	Dly	.08
"	Sa B	.23	.17	Dly	.08
Cochabamba, Bolivia	Mia P	1.26	.43	M,W,Sa	.20
"	No P	1.35	.43	M,W,Sa	.20
"	Bro P	1.35	.43	Su,T,F	.20
"	Lgs P	1.95	.43	M,Th,Sa	.20
Concepcion, Bolivia	Mia P	1.31	.43	Sa	.20
"	No P	1.45	.43	Sa	.20
"	Bro P	1.45	.43	F	.20
"	Lgs P	2.03	.43	Th	.20
Cordoba, Argentina	Mia P	1.49	.43	Dly	.20
"	No P	1.63	.43	Dly	.20
"	Bro P	1.63	.43	Dly	.20
"	Lgs P	2.19	.43	Dly	.20
Coro, Venezuela	Mia P	.74	.32	Dly	.15
"	No P	1.07	.43	Dly	.15
"	Bro P	1.11	.43	Dly	.15
"	Lgs P	1.69	.43	Dly	.20
Corumba, Brazil	Mia P	1.41	.43	M,Sa	.20
"	No P	1.56	.43	Su,F	.20
"	Bro P	1.56	.43	Th,Sa	.20
"	Lgs P	2.13	.43	W,F	.20
Cristobal, Canal Zone	Mia P	.76	.32	Dly	.10
"	No P	.92	.32	Dly	.10
"	Bro P	.92	.32	Dly	.10
"	Lgs P	1.46	.43	Dly	.15
Cuenca, Ecuador	Mia P	1.06	.32	Su,W,F	.15
"	No P	1.15	.43	Su,W,F	.15
"	Bro P	1.15	.43	T,Th,Sa	.15
"	Lgs P	1.76	.43	M,W,F	.10
Curacao, N.W.I.	Mia P	.73	.32	Dly	.10
"	No P	.93	.32	Dly	.10
"	Bro P	1.11	.43	Dly	.10
"	Lgs P	1.73	.43	Dly	.10
"	Mia K	.73	.45	Dly	.20
Curityba, Brazil	Mia P	1.60	.43	Su,M,W	.20
"	No P	2.00	.43	Su,Sa,T	.20
"	Bro P	2.00	.43	F,Sa,M	.20
"	Lgs P	2.58	.58	Th,F,Su	.10
David, Panama	Mia P	.81	.32	Dly	.10
"	No P	.85	.32	Dly	.10
"	Bro P	.85	.32	Dly	.10
"	Lgs P	1.38	.43	Dly	.15
Esmeraldas, Ecuador	Mia P	.99	.32	M	.15
"	No P	1.11	.43	M	.15
"	Bro P	1.11	.43	Su	.15
"	Lgs P	1.71	.43	Sa	.20
Florianopolis, Brazil	Mia P	1.63	.43	Sa	.20
"	No P	2.11	.43	F	.20
"	Bro P	2.11	.43	Th	.20
"	Lgs P	2.68	.58	W	.20
Fort de France, Martinique	Mia P	.71	.32	F,Sa	.10
"	No P	1.00	.32	Su,F	.10
"	Bro P	1.16	.43	Th,Sa	.10
"	Lgs P	1.78	.43	W,F	.10
Fortaleza, Brazil (Ceara)	Mia P	1.23	.43	M,T,W,Th,Sa	.20
"	No P	1.54	.43	Su,M,T,W,F	.20
"	Bro P	1.54	.43	Su,M,T,Th, Sa	.20
"	Lgs P	2.10	.43	Su,M,W,F,Sa	.20
Georgetown, British Guiana	Mia P	.90	.32	Su,F,Sa	.15
"	No P	1.24	.43	Th,F,Sa	.15
"	Bro P	1.24	.43	W,Th,F	.15
"	Lgs P	1.88	.43	T,W,Th	.15
Guadalajara, Mexico	Bro P	.43	.17	Dly	.08
"	Lgs P	.59	.32	Dly	.08
Guantanamo Cuba	Mia P	.28	.17	Dly	.08

Destination	U. S. Gateway & Airline	RATES (See Note) Per Lb.	RATES (See Note) Per $100 Value	Depart	Mail per ½ Oz.
Barcelona, Venezuela	Mia P	.85	.32	Dly	.15
"	No P	1.13	.43	Dly	.15
"	Bro P	1.17	.43	Dly	.15
"	Lgs P	1.78	.43	Dly	.15
Barranquilla, Colombia via Kingston	Mia K	.85	.50	Tu Sa	.15
via Balboa	Mia P	.61	.32	Dly	.15
"	Bro P	1.03	.32	Dly	.15
"	No P	1.03	.32	Dly	.15
"	Lgs P	1.59	.43	Dly	.15
Bauru, Brazil	Mia P	1.58	.43	M,Sa	.20
"	No P	1.71	.43	Su,F	.20
"	Bro P	1.71	.43	Th,Sa	.20
"	Lgs P	2.28	.58	W,F	.20
Belem, Brazil	Mia P	1.13	.43	Dly	.20
"	No P	1.34	.43	Dly	.20
"	Bro P	1.34	.43	Dly	.20
"	Lgs P	1.95	.43	Dly	.20
Bello-Horizonte, Brazil	Mia P	1.65	.43	Su,W,F	.20
"	No P	2.13	.43	T,Th,Sa	.20
"	Bro P	2.13	.43	M,W,F	.20
"	Lgs P	2.69	.58	Su,T,Th	.20
Bonaire, N.W.I.	— P	via Curacao. N.W.I.			
"	Mia K	.71	.45	M,Tu,Th,F, Sa	.10
Buenos Aires, Argentina	Mia P	1.56	.43	Dly	.20
"	No P	1.70	.43	Dly	.20
"	Bro P	1.70	.43	Dly	.20
"	Lgs P	2.26	.58	Dly	.20
Cali, Col. via Balboa	Mia P	.89	.32	Dly	.25
"	No P	1.03	.32	Dly	.25
"	Bro P	1.03	.32	Dly	.25
"	Lgs P	1.59	.43	Dly	.25
Camaguey, Cuba	Mia P	.26	.17	Thrice Dly	.08
"	Mia K	.20	.25	Dly	.08
Campeche, Mexico	Mia P	.41	.17	Dly	.08
"	No P	.41	.17	Dly	.08
"	Bro P	.51	.32	Dly	.08
"	Lgs P	1.00	.32	Dly	.08
Campo Grande, Brazil	Mia P	1.48	.43	Mo,W,Sa	.20
"	No P	1.61	.43	Su,T,F	.20
"	Bro P	1.61	.43	M,Th,Sa	.20
"	Lgs P	2.18	.43	Su,W,F	.20
Canavieiras, Brazil	Mia P	1.33	.43	Th,Sa	.20
"	No P	1.81	.43	W,F	.20
"	Bro P	1.81	.43	T,Th	.20
"	Lgs P	2.38	.58	M,W	.20
Caracas, Venezuela (*See La Guaira*)					
Caravellas, Brazil	Mia P	1.36	.43	T,W	.20
"	No P	1.85	.43	M,T	.20
"	Bro P	1.85	.43	Su,M	.20
"	Lgs P	2.41	.58	Su,S	.20

NOTE: Per pound rate shown in this column is based on the average package weighing 35 lbs., i.e.: 1 lb. package from New York to Ontario would cost $1 or 25 lbs. $4. Average cost per lb.: 16¢ . . . Valuation rates are only due if consignments are shipped with declared value. . . . **American Airlines** offers International Airfreight Service on shipments over 25 pounds between its gateway points and Monterrey and Mexico City. Four classes of rates have been established. For further information, contact American Airlines.

* British Overseas Airways Corp. carries from Foynes, Ireland to destinations in England, Scotland, and Wales.

† Canadian air express is carried on the same basis as air express within the U. S.: $50 declared value free; excess charged at 10 cents per $100 or fraction thereof.

LATIN AMERICAN ROUTES

Destination	U. S. Gateway & Airline	RATES (See Note) Per Lb.	RATES (See Note) Per $100 Value	Depart	Mail per ½ Oz.
Antigua, B. W. I.	Mia P	.64	.32	Sa	.10
"	No P	.96	.32	Su	.10
"	Bro P	1.13	.43	Sa	.10
"	Lgs P	1.73	.43	F	.10
Antilla, Cuba	Mia P	.24	.15	Dly	.08
Antofagasta, Chile	Mia P	1.26	.43	Su,M,W,F,Sa	.20
"	No P	1.34	.43	Su,M,W,F,Sa	.20
"	Bro P	1.34	.43	Su,T,Th,F,Sa	.20
"	Lgs P	1.95	.43	M,W,Th,F,Sa	.20
Aracaju, Brazil	Mia P	1.26	.43	Th,Sa	.20
"	No P	1.71	.43	W,F	.20
"	Bro P	1.71	.43	T,Th	.20
"	Lgs P	2.28	.58	M,W	.20
Arequipa, Peru	Mia P	1.23	.43	Dly	.15
"	No P	1.26	.43	Dly	.15
"	Bro P	1.26	.43	Dly	.15
"	Lgs P	1.93	.43	Dly	.15
Arica, Chile	Mia P	1.25	.43	Su,M,W,F,Sa	.20
"	No P	1.26	.43	Su,M,W,F,Sa	.20
"	Bro P	1.26	.43	Su,T,Th,F,Sa	.20
"	Lgs P	1.94	.43	M,W,Th,F,Sa	.20
Aruba, N. W. I.	— P	via Curacao. N. W. I.			
"	Mia K	.71	.45	Dly	.10
Asuncion, Paraguay	Mia P	1.73	.43	Sa,W	.20
"	No P	1.86	.43	Sa,T	.20
"	Bro P	1.86	.43	F,M	.20
"	Lgs P	2.43	.58	Th,Su	.20
Bahia, Brazil (*See Sao Salvador*)					
Balbon, Canal Zone	Mia P	.76	.32	Dly	.10
"	No P	.90	.32	Dly	.10
"	Bro P	.90	.32	Dly	.10
"	Lgs P	1.45	.43	Dly	.10
Baracoa, Cuba	Mia P	.28	.17	Dly	.08

Destination	U.S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per Oz.
Guatemala City, Gua..	Mia P	.59	.32	Dly	.10
"	No P	.53	.32	Twice Dly	.10
"	Bro P	.53	.32	Dly	.10
"	Lgs P	1 08	.43	Dly	.10
Guayaquil, Ecuador....	Mia P	1.04	.32	Dly	.15
"	No P	1.15	.43	Dly	.15
"	Bro P	1.15	.43	Dly	.15
"	Lgs P	1.75	.43	Dly	.15
Havana, Cuba.....	Mia P	12	.15	Thrice Dly	.08
	MiaEA	.20	.15	Twice Dly	.08
Hermosillo, Mexico....	Lgs P	.24	.15	Dly	.08
Iguassu Falls, Brazil...	Mia P	1.69	.43	W,Su	.20
"	No P	1.91	.43	T,Sa	.20
"	Bro P	1.91	.43	M,F	.20
"	Lgs P	2.48	.58	Su,Th	.20
Irtepec, Mexico.....	Mia P	.76	.32	M,T,W,Th, F,Su	.08
"	No P	.76	.32	Su,T,W,Th. F,M	.08
"	Bro P	.41	.17	Su,T,W,Th, F,M	.08
	Lgs P	.89	.32	Su,T,W,Th, Sa,M	.08
Joao Passon (Cabadello).	Mia P	1.25	.43	.....	.20
"	No P	1.64	.43	.....	.20
"	Bro P	1.64	.43	.....	.20
"	Lgs P	2.20	.43	.....	.20
Kingston, Jamaica....	Mia P	.39	.17	Dly	.10
"	Mia K	.35	.35	M,Tu	15
La Guaira, Venezuela...	Mia P	.75	.32	Dly	15
"	Mia K	75	.45	Dly	.10
"	No P	1.08	.43	Dly	15
"	Bro P	1.15	.43	Dly	.15
"	Lgs P	1.75	.43	Dly	.15
La Paz, Bolivia.....	Mia P	1.25	43	M,T,W,Th,Sa	.20
"	No P	1.30	43	M,T,W,Th,Sa	20
"	Bro P	1.30	43	Su,M,T,W,F	20
"	Lgs P	1.95	43	Su,M,T,Th,Sa	20
Lima, Peru.....	Mia P	1.18	43	Dly	.15
"	No P	1.24	43	Dly	.15
"	Bro P	1.24	43	Dly	.15
"	Lgs P	1.88	43	Dly	.15
Loja, Ecuador.....	Mia P	1.08	43	W,Su,F	15
"	No P	1.17	43	W,Su,F	.15
"	Bro P	1.17	43	T,Th,Sa	.15
"	Lgs P	1.78	43	M,W,F	15
Maceio, Brazil.....	Mia P	1.26	43	M,T,Th,Sa	.20
"	No P	1.68	43	Su,M,W,F	.20
"	Bro P	1.68	43	Su,T,Th,Sa	20
"	Lgs P	2 24	43	M,W,F,Sa	.20
Managua, Nicaragua...	Mia P	.76	32	Dly	.10
"	No P	.71	32	Twice Dly	.10
"	Bro P	.71	32	Dly	.10
"	Lgs P	1.22	43	Dly	10
Manaos, Brazil.....	Mia P	1.24	43	W,Su,Sa	20
"	No P	1.56	43	T,F,Sa	.20
"	Bro P	1.56	43	M,Th,F	20
"	Lgs P	2.13	43	Su,W,Th	20
Manta, Ecuador.....	Mia P	1 03	32	W,F	15
"	No P	1.14	43	W,F	.15
"	Bro P	1.14	43	T,Th	.15
"	Lgs P	1.74	43	M,W	.15
Manzanillo, Cuba.....	Mia P	.26	17	Dly	.08
Maracaibo, Venezuela..	Mia P	.69	32	Dly	.15
"	Mia K	.73	45	Dly	.15
"	No P	1.00	43	Dly	15
"	Bro P	1.08	43	Dly	15
"	Lgs P	1.66	43	Dly	.15
Maturin, Venezuela....	Mia P	.89	.32	Dly	.15
"	No P	1.17	43	Dly	15
"	Bro P	1.19	43	Dly	.15
"	Lgs P	1.80	43	Dly	15
Mazatlan, Mexico.....	Bro P	.57	32	Dly	08
"	Lgs P	.45	17	Dly	.08
Medellin, Colombia....	Mia P	1.06	32	Dly	.15
"	No P	1.10	43	M,T,F,Sa	.15
"	Bro P	1.10	43	Su,M,Th,F	15
"	Lgs P	1.65	43	Su,W,Th,Sa	.15
Mendoza, Argentina....	Mia P	1.41	43	Su,M,W,F,Sa	.20
"	No P	1.55	43	Su,M,W,F,Sa	.20
"	Bro P	1.55	43	Su,T,Th,F,Sa	.20
"	Lgs P	2.11	43	M,W,Th,F,Sa	.20
Merida, Mexico.....	Mia P	.37	17	Dly	.08
"	No P	.37	17	Twice Dly	.08
"	Bro P	.55	.32	Dly	.08
"	Lgs P	1.04	32	Dly	.08
"	Dl B	.56	32	Dly	.08
"	Fv B	.56	32	Dly	.08
"	Lo B	.42	32	Dly	.08
"	Sa B	.49	32	Dly	.08
Mexicali, Mexico.....	Lgs P	.20	.15	Dly	.08
Mexico City, Mexico...	Mia P	.64	.32	Dly	.08
"	No P	.64	.32	Dly	.08
"	Dl B	.40	.17	Dly	.08
"	Bro P	.26	.17	Thrice Dly	.08
"	Lgs A	.67	.17	Dly	.08
"	Lgs P	.67	32	Dly	.08
"	Lo B	.26	.17	Dly	.08
"	Fv B	.40	.17	Dly	.08
"	Fv A	.40	.17	Dly	.08
"	Eo A	.42	.17	Dly	.08
"	Sa A	.33	.17	Dly	.08
"	Sa B	.33	.17	Dly	.08
Minatitlan, Mexico	Mia P	.53	32	Dly	.08
"	No P	.53	32	Dly	.08
"	Bro P	.39	17	Dly	.08
"	Lgs P	.86	32	Dly	.08

Destination	U.S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail 15. per ½ Oz
Monterrey, Mexico....	Fv A	.27	.17	Dly	.08
"	Fv B	.27	.17	Dly	.08
"	Dl B	.27	.17	Dly	.08
"	Eo A	.34	.17	Dly	.08
"	Lgs A	.59	.17	Dly	.08
"	Lo B	.13	.15	Dly	.08
"	Sa A	.20	.15	Dly	.08
"	Sa B	.20	.15	Dly	.08
Montevideo, Uruguay..	Mia P	1.60	.43	M,W,F,Su	.20
"	No P	1.74	.43	Su,T,Th,Sa	.20
"	Bro P	1.74	.43	M,W,S,F	.20
"	Lgs P	2.30	.58	Su,T,F,Th	.20
Mossoro, Brazil.....	Mia P	1.24	.43	.....	.20
"	No P	1.56	.43	.....	.20
"	Bro P	1.56	.43	.....	.20
"	Lgs P	2.13	.43	.....	.20
Nassau, Bahamas.....	Mia P	.20	.15	Dly ex Su	.10
Natal, Brazil.....	Mia P	1.25	.43	M,T,Th,Sa	.20
"	No P	1.61	.43	Su,M,W,F	.20
"	Bro P	1.61	.43	Su,T,Th,Sa	.20
"	Lgs P	2.18	.43	M,W,F,Sa	.20
Nuevo Laredo, Mexico.	Dl B	.22	.17	Dly	.08
"	Fv B	.22	.17	Dly	.08
"	Sa B	.15	.15	Dly	.08
"	Lo B	.08	05	Dly	.08
Oaxaca, Mexico.....	Mia P	.73	.32	M,W,Sa	.08
"	No P	.73	32	M,W,Sa	.08
"	Bro P	.35	17	Su,T,Th	.08
"	Lgs P	.81	.32	M,W,Sa	.08
Oruro, Bolivia.....	Mia P	1.26	.43	M,T,W,Th,Sa	.20
"	No P	1.33	.43	M,T,W,Th,Sa	.20
"	Bro P	1.33	.43	Su,M,T,W,F	.20
"	Lgs P	1.95	.43	Su,M,T,Th,Sa	.20
Panama City, Panama..	Mia P	.76	.32	Dly	.10
"	No P	.90	.32	Dly	.10
"	Bro P	.90	.32	Dly	.10
"	Lgs P	1.45	.43	Dly	.10
Para, Brazil (*See Belem*)					
Paramaribo, Sur.....	Mia P	.97	.32	Dly	.15
"	Mia K	1.14	.60	Sa,W	.15
"	No P	1.25	.43	Dly	.15
"	Bro P	1.25	.43	Dly	.15
"	Lgs P	1.90	.43	Dly	.15
Parnahyba, Brazil.....	Mia P	1.21	.43	W	.20
"	No P	1.48	.43	T	.20
"	Bro P	1.48	.43	M	.20
"	Lgs P	2.04	.43	S	.20
Point a Pitre, Guadeloupe.....	Mia P	.66	.32	Sa	.10
"	No P	.98	.32	Su	.10
"	Bro P	1.14	.43	Sa	.10
"	Lgs P	1.74	.43	F	.10
Port au Prince, Haiti..	Mia P	.37	.17	Thrice Dly	.10
"	Mia K	.39	.35	M,Th	.10
Port of Spain, Trinidad.	Mia P	.79	.32	Dly	.10
"	Mia K	.91	.55	Sa,T,W	.10
"	No P	1.20	.43	Dly	.10
"	Bro P	1.20	.43	Dly	.10
"	Lgs P	1.81	.43	Dly	.10
Porto Alegre, Brazil....	Mia P	1.70	.43	Su,M,W,F,Sa	.20
"	No P	2.19	.43	Su,T,Th,F,Sa	.20
"	Bro P	2.19	.43	M,W,Th,F,Sa	.20
"	Lgs P	2.75	.58	Su,T,W,Th,F	.20
Preston, Cuba.....	Mia P	.24	.15	Dly	.08
Puebla, Puebla.....	Dl B	.41	.17	Dly	.08
"	Fu B	.41	.17	Dly	.08
"	Lo B	.27	.17	Dly	.08
"	Sa B	.34	.17	Dly	.08
Puerto Suarez, Bolivia.	Mia P	1.41	.43	Sa	.20
"	No P	1.56	.43	Sa	.20
"	Bro P	1.56	.43	F	.20
"	Lgs P	2.13	.43	Th	.20
Quito, Ecuador.....	Mia P	.97	32	Dly	.15
"	No P	1.09	.43	Dly	.15
"	Bro P	1.09	.43	Dly	.15
"	Lgs P	1.68	.43	Dly	.15
Recife (Pernambuco), Brazil.....	Mia P	1.26	.43	M,T,Th,Sa	.20
"	No P	1.65	.43	Su,M,W,F	.20
"	Bro P	1.65	.43	Su,T,Th,Sa	.20
"	Lgs P	2.21	.43	M,W,F,Sa	.20
Rio de Janeiro.....	Mia P	1.50	.43	Su,M,W,F,Sa	.20
"	No P	1.98	.43	Su,T,Th,F,Sa	.20
"	Bro P	1.98	.43	M,W,Th,F,Sa	.20
"	Lgs P	2.54	.58	Su,T,W,Th,F	.20
Robore, Bolivia.....	Mia P	1.38	.43	Sa	.20
"	No P	1.51	.43	Sa	.20
"	Bro P	1.51	.43	F	.20
"	Lgs P	2.08	.43	Th	.20
Salinas, Ecuador.....	Mia P	1.05	.32	W,F	.15
"	No P	1.15	.43	W,F	.15
"	Bro P	1.15	.43	T, Th	.15
"	Lgs P	1.75	.43	M,W	.15
Salta, Argentina.....	Mia P	1.30	.43	T,Th,Sa	.20
"	No P	1.45	.43	T,Th,Sa	.20
"	Bro P	1.45	.43	M,W,F	.20
"	Lgs P	2.03	.43	Su,T,Th	.20
San Ignacio, Bolivia....	Mia P	1.33	.43	Sa	.20
"	No P	1.48	.43	Sa	.20
"	Bro P	1.48	.43	F	.20
"	Lgs P	2.04	.43	Th	.20
San Jose, Bolivia.....	Mia P	1.35	.43	Sa	.20
"	No P	1.50	.43	Sa	.20
"	Bro P	1.50	.43	F	.20
"	Lgs P	2.08	.43	Th	.20
San Jose, Costa Rica...	Mia P	.83	.32	Dly	.10
"	No P	.76	.32	Twice Dly	.10
"	Bro P	.76	.32	Dly	.10

Destination	U.S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per ½ Oz.
San Jose, Costa Rica *Cont.*	Lgs P	1.31	.43	Dly	.10
San Juan, Puerto Rico..	Mia P	.53	.32	Thrice Dly	.08
San Salvador, El Salvador.....	Mia P	.64	32	Dly	.10
"	No P	.61	.32	Twice Dly	.10
"	Bro P	.61	.32	Dly	.10
"	Lgs P	1.14	.43	Dly	.10
Santa Cruz, Bolivia....	Mia P	1.28	.43	M,W,Sa	.20
"	No P	1.43	.43	M,W,Sa	.20
"	Bro P	1.43	.43	Su,T,F	.20
"	Lgs P	1.99	.43	M,Th,Sa	.20
Santiago, Chile.....	Mia P	1.38	.43	Su,M,W,F,Sa	.20
"	No P	1.51	.43	Su,M,W,F,Sa	.20
"	Bro P	1.51	.43	Su,T,Th,F,Sa	.20
"	Lgs P	2.08	.43	M,W,Th,F,Sa	.20
Santiago, Cuba.....	Mia P	.26	.17	Dly	.08
Sao Luis, Brazil.....	Mia P	1.19	.43	M,T,Th,Sa	.20
"	No P	1.43	.43	Su,M,W,F	.20
"	Bro P	1.43	.43	Su,T,Th,Sa	.20
"	Lgs P	1.99	.43	W,F,Sa,M	.20
Sao Paolo, Brazil	Mia P	1.55	.43	Su,M,W,F,Sa	.20
"	No P	2.04	.43	Su,T,Th,F,Sa	.20
"	Bro P	2 04	.43	M,W,Th,F,Sa	.20
"	Lgs P	2.60	.58	Su,T,W,Th,F	.20
Sao Salvador, Brazil.... (Bahia)	Mia P	1.28	43	M,T,W,Th,Sa	.20
"	No P	1.76	43	Su,M,T,W,F	.20
"	Bro P	1 76	43	Su,M,T,Th,Sa	.20
"	Lgs P	2 33	58	Su,M,W,F,Sa	.20
St. Martin, N.W.I.....	.....	1 20	58	Su	10
St. Thomas, V. I.....	Mia P	57	32	Sa	08
"	No P	90	.32	Su	08
"	Bro P	1 10	43	Sa	.08
"	Lgs P	1 68	43	F	.08
Talara, Peru.....	Mia P	1.08	43	Dly	.15
"	No P	1.17	43	Dly	.15
"	Bro P	1.17	43	Dly	.15
"	Lgs P	1.79	43	Dly	.15
Tampico, Mexico.....	Bro P	.20	15	Dly	.08
"	Lgs P	.81	.32	Dly	.08
Tapachula, Mexico.....	Mia P	.74	.32	Dly	.08
"	No P	.74	.32	Dly	.08
"	Bro P	.53	.32	Dly	.08
"	Lgs P	1.02	.32	Dly	.08
Tegucigalpa, Honduras.	Mia P	.69	.32	Dly	.10
"	No P	.68	.32	Twice Dly	.10
"	Bro P	68	32	Dly	.10
"	Lgs P	1.18	43	Dly	.10
Tres Lagoas, Brazil....	Mia P	1.53	.43	.....	.20
"	No P	1.66	43	.....	.20
"	Bro P	1.66	43	.....	.20
"	Lgs P	2.23	43	.....	.20
Tucuman, Argentina...	Mia P	1.34	43	T,Th,Sa	.20
"	No P	1.49	43	T,Th,Sa	.20
"	Bro P	1.49	43	M,W,F	.20
"	Lgs P	2.05	43	T,Th,Su	.20
Turbo, Colombia.....	Mia P	1.06	.32	Dly	.15
"	No P	1.10	43	T,F	.15
"	Bro P	1.10	43	M,T,Th	.15
"	Lgs P	1.65	43	W,Th	.15
Tuxpan, Mexico.....	Bro P	.20	.15	Dly	.08
"	Lgs P	.83	.32	Dly	.08
Tuxtla,Gutierrez,Mexico	Mia P	.81	32	M,W,Sa	.08
"	No P	.81	.32	M,W,Sa	.08
"	Bro P	.45	.17	Su,T,Th	.08
"	Lgs P	.93	.32	M,W,Sa	.08
Uyuni, Bolivia.....	Mia P	1.26	43	T,Th	.20
"	No P	1.38	43	T,Th	.20
"	Bro P	1.38	43	M,W	.20
"	Lgs P	1.95	43	Su,Th	.20
Veracruz, Mexico.....	Mia P	.57	.32	Dly	.08
"	No P	.57	.32	Dly	.08
"	Bro P	.33	.17	Dly	.08
"	Lgs P	.79	.32	Dly	.08
"	Dl B	.42	.32	Dly	.08
"	Fv B	.42	.32	Dly	.08
"	Lo B	.28	.17	Dly	.08
"	Sa B	.35	.17	Dly	.08
Victoria, Brazil.....	Mia P	1.41	.43	Th,Sa	.20
"	No P	1.90	.43	W,F	.20
"	Bro P	1.90	.43	T,Th	.20
"	Lgs P	2.46	.58	M,W	.20
Villahermosa, Mexico...	Mia P	.49	.32	Dly	.08
"	No P	.49	.32	Dly	.08
"	Bro P	.43	.17	Dly	08
"	Lgs P	.90	32	Dly	.08

Note: Charges Collect and C. O. D. Services have been resumed to Pan American Airways Airports in the following countries: Canal Zone — Costa Rica — Cuba — Dominican Republic—El Salvador—Guatemala—Haiti—Honduras—Panama Republic—Puerto Rico—Surinam—Trinidad—Venezuela—Virgin Islands; also charges collect (no C. O. D.) service to Nicaragua.

ATLANTIC ROUTES

Bolama, Portuguese Guinea, Africa.....	Nyk P	2.66	.43	Fortnightly	.50
Botwood Newfoundland	Nyk P	.81	32	Su,W,F	.15
Dakar, Senegal, Africa	.....	2.36	.43	T	.45
Foynes, Eire via Botwood	Nyk P	1.78	.43	Su,W,F	.30
Hamilton, Bermuda....	Nyk P	.37	.17	T,W,F,Sa	.10
Leopoldville, Belg. Congo	Nyk P	3.63	.43	Alt. Su	.60
Lisbon, Portugal.....	Nyk P	1.28	.43	T,F	.30

Destination	U. S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per ½ Oz.
London, England	Bw AO	2.00	.25	T	.30
"	Cg AO	2.23	.25	M	.30
"	NykAO	2.02	.25	T,Th,Sa	.30
"	Nyk P	1.17	.43	M,W,F,Sa	.30
"	Ph AO	2.05	.25	F	.30
"	Wa AO	2.08	.25	F	.30
Monrovia (Fisherman's Lake), Liberia	Nyk P	2.67	.43	T	.50
Scotland via Foynes*	Nyk P	(Rates	on	Application)	.30
Shediac, N. B.	Nyk P	.51	.17	Su,W,F	.08
Shannon, Eire	Bw AO	1.76	.25	T	.30
"	Cg AO	1.99	.25	M	.30
"	NykAO	1.78	.25	T,Th,Sa	.30
"	Nyk P	1.09	.43	M,W,F,Sa	.30
"	Ph AO	1.81	.25	F	.30
"	Wa AO	1.84	.25	F	.30
Wa es via Foynes*	Nyk P	(Rates	on	Application)	.30
ALASKA ROUTES					
Aniak Alaska	Ste P	.83	.32	Sa	.08
Bethel "	Ste P	.86	.32	Sa	.08
Burwash Landing "	Ste P	.55	.32	Dly	.08
Fairbanks "	Ste P	.68	.32	Dly	.08
Flat "	Ste P	.79	.32	Sa	.08
Galena "	Ste P	.77	.32	S,T,Th	.08
Juneau "	Ste P	.43	.17	Thrice Dly	.08
Ketchikan "	Ste P	.33	.17	Thrice Dly	.08
Lake Minchumina "	Ste P	.73	.32	Sa	.08
McGrath "	Ste P	.76	.32	Sa	.08
Moses Point "	Ste P	.82	.32	Su,T,Th	.08
Nome "	Ste P	.85	.32	S,T,Th	.08
Tanacross "	Ste P	.62	.32	Dly	.08
Tanana "	Ste P	.73	.32	Dly	.08
Whitehorse, Canada	Ste P	.49	.32	Dly	.08
CANADIAN ROUTES					
Calgary, Alb.	Nyk T	1.02	†	Dly	.08
Edmonton, Alb.	Nyk T	1.06	†	Dly	.08
Halifax, N. S.	Nyk T	.31	†	Dly	.08
Lethbridge, Alb.	Nyk T	.88	†	Dly	.08
"	CubW	.04	†	Dly	.08
London, Ont.	Nyk T	.22	†	Dly	.08
Moncton, N. B.	BbNE	.08	†	Dly	.08
Montreal, Que.	Nyk C	.12	†	Dly	.08
"	Nyk T	.12	†	Dly	.08
"	Jg NE	.04	†	Dly	.08
North Bay, Ont.	Nyk T	.27	†	Dly	.08
Ottawa, Ont.	Nyk T	.18	†	Dly	.08
Regina, Sask.	Nyk T	.80	†	Dly	.08
St. John, N. B.	Nyk T	.31	†	Dly	.08
St. Johns, N. F.	Nyk T	.58	†	Dly	.08
Sydney, N. S.	Nyk T	.36	†	Dly	.08
Toronto, Ont.	Nyk A	.16	†	Dly	.08
"	Nyk T	.16	†	Dly	.08
Vancouver, B. C.	Ste U	.03	†	Dly	.08
"	Nyk T	.96	†	Dly	.08
Windsor, Ont.	Nyk A	.20	†	Dly	.08
"	Cg A	.12	†	Dly	.08
"	Nyk T	.20	†	Dly	.08
Winnipeg, Man.	GfNW	.04	†	Dly	.08
"	Nyk T	.60	†	Dly	.08
PACIFIC ROUTES					
Honolulu, T. H.	Ste P	.93	.32	Dly	.08

SCALE OF RATES COVERING WAR RISKS GENERALLY IN USE IN AMERICAN MARINE INSURANCE MARKETS FOR MAIL AND AIR SHIPMENTS

Schedule Dated January 15, 1946

A—Registered Mail, excluding Registered Air Mail and Air Express:

Non-negotiable securities (warranted full value declared for insurance)—37½% of Cargo Rates. Securities (except as provided above), documents and similar interest—75% of Cargo Rates.

Currency including jewelry, precious stones and metals, etc.—100% of Cargo Rates.

B—Registered Air Mail and/or Air Express and/or other shipments by air: Western Hemisphere (excluding shipments between points in Continental United States and/or Canada:

	All classes of property
Sendings between points in Western Hemisphere	2½c%
U. S. or Canada to or from:	
1. British Isles, Eire, Sweden, Holland, Belgium, France, Portugal, Spain, Italy, Switzerland, Iceland, Greenland	2½c%
2. Africa	5c%
3. Arabia, Palestine, Syria, Cyprus, Turkey, Greece, Iran, Iraq	5c%
4. Afghanistan, India, Ceylon	7½c%
5. Chungking	⅛c%
6. Australasia	5c%

C—Ordinary Parcel Post, Government Insured Parcel Post, Registered Post, Ordinary Mail (Excluding Air Mail)

(A) United States or Canada to from Australasia, Hawaiian and other Pacific Islands—Transpacific Cargo Rate.

(B) U. S. to from United Kingdom, Eire, Portugal, Spain, Africa, Near East, Far East, Newfoundland, Iceland, Greenland, Bermuda—Cargo Schedule Rate to from New York but with respect to shipments to or from Spain under policies endorsed with the airborne clause, the Lisbon rate will be charged plus an additional charge of 2½¢% because of the possibility that shipments of valuables may go forward to or from interior points by Air.

(C) U. S. West of Rockies to from Costa Rica, Panama, Panama Canal Zone, Colombia, Ecuador, Peru, Bolivia and Chile—Cargo Schedule Rate for Pacific voyages to from San Francisco.

(D) U. S. West of Rockies to from Venezuela, Guianas, Brazil, Paraguay, Uruguay, Argentina—Cargo Schedule Rate via Panama to from San Francisco.

(E) U. S. East of Rockies to from Costa Rica, Panama, Panama Canal Zone, So. America, West Indies (except Bermuda)—Schedule Rate to from U. S. Gulf.

(F) *U. S. West of Rockies to from Mexico—25% of Schedule Cargo Rate for Pacific voyages to from San Francisco with a minimum of 2½¢%.

*U. S. East of Rockies to from Mexico—25% of Schedule Cargo Rate to from United States Gulf with a minimum of 2½¢%.

(G) U. S. to from British Honduras, Guatemala, Republic of Honduras, El Salvador and Nicaragua—Cargo Schedule Rate for voyages between U. S. Gulf and East Coast Central America.

* Note: Reduced percentage provided assured agrees to pay this percentage on all shipments; otherwise individual shipments on Facultative Basis.
Cargo Schedule Rate for Pacific voyages to from San Francisco.
Cargo Schedule Rate to from United States Gulf.
Rates in this Section are not subject to revision, either upward or downward, should be actual route of the shipments become known.

D—Express (Excluding Air Express)—Charge Cargo War Risk Schedule Rates.